OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MEMORANDUM **February 12, 2016**

TO: Phillip Fielder, P.E., Permits and Engineering Group Manager

THROUGH: Phil Martin, P.E., Engineering Manager, Existing Source Permit Section

THROUGH: Peer Review

FROM: Jian Yue, P. E., Engineering Section

SUBJECT: Evaluation of Permit Application No. **2003-099-C (M-6) PSD**
Huber Engineered Woods, LLC
Broken Bow OSB Mill
Broken Bow, McCurtain County, Oklahoma
SW 1/4 Sec. 14, T6S, R24E IM, Latitude: 34.030^{o}, Longitude: -94.768
Directions: From the intersection of U.S. Highway 259 and SH 3 in Broken Bow, go west 2 miles on SH3, turn south into the facility.

SECTION I. INTRODUCTION

Huber Engineered Woods, LLC, (HEW) a subsidiary of J. M. Huber Corporation (Huber), has requested a modification to the construction permit (2003-099-C (M-5)) issued on January 3, 2014 for its oriented strand board (OSB) mill (Mill) in Broken Bow, Oklahoma (SIC 2493). This modification will address the following issues:

1. Update CO_2e emissions calculations that previously relied upon incorrect heat inputs for some of the miscellaneous combustion units at the Mill.
2. Update CO_2e emissions from the biofilter based on refined emission factors.
3. EPA finalized amendments to 40 CFR 98 Subpart W on November 29, 2013, that included updates of global warming potentials and the CO_2 emission factor for natural gas that resulted in slight increases of calculated CO_2e emissions.
4. Modify the compliance demonstration requirements contained in Specific Condition 1 for EUG 4 – Press to be consistent with required methods specified in 40 CFR 63 Subpart DDDD.

The following table lists CO2e emission changes compared to limits set in Permits No. 2003-99-C (M-4) PSD and 2003-099-C (M-5).

Sources	2003-99-C (M-4) PSD & 2003-99-C (M-5)	Proposed
	CO2e (TPY)	**CO2e (TPY)**
Energy System/Dryers & RTO	320,494.41	320,754.42
Fire Pump	450.00	6,932.60
Railcar Steam Generator		
Air Makeup Units		
Biofilter	306.42	991.37
Total	**321,250.83**	**328,678.40**
Emission Increase	**7427.57**	

This modification is considered as a relaxation to the PSD permit no. 2003-99-C (M-3) PSD, thus a construction permit has been required.

SECTION II. FACILITY DESCRIPTION

The OSB mill manufactures structural panels made from wood wafers, or strands, produced from logs at the plant. The facility uses varying proportions of softwood and hardwood in the manufacturing of OSB. OSB manufacturing consists of a series of operations, which convert whole logs into wood strands. Wood strands are blended with various resins, for example, liquid phenol formaldehyde (LPF), methylene diphenyl diisocyanate (MDI), powder phenol formaldehyde (PF), and/or melamine urea phenol formaldehyde (MUPF), and formed into a layered mat. Strands in each layer can be aligned perpendicularly to adjacent layers to provide structural properties superior to that of randomly oriented strandboard; or they can be aligned in parallel to achieve properties associated with composite strand lumber. The following subsections / activities describe the processes in the OSB plant.

The major activities at the Broken Bow facility include the following:

- Raw Material Handling
- Strand Production
- Strand Drying
- Blending
- Forming
- Product Finishing
- Energy System
- Process Storage Tanks
- Particulate Handling
- Fuel Storage

<u>Raw Material Handling</u>

Major raw materials involved are:

Wood
Resins
Release agents/waxes

Inks and sealants
Maintenance materials (lubricants, water treatment, etc)

Logs arrive in the wood yard via trucks and are transferred into storage piles. A crane transfers the logs from the piles to two debarkers where the bark is removed. Wood waste from debarkers is collected and transferred by conveyers to the bark hog and then onto either a wet fuel bin or bark storage pile.

Strand Production

Once the wood is debarked, the logs are moved to the stranding area. The strander cuts the logs to produce thin green wood strands having typical dimensions of 1.5 inches wide by 5 inches long and 0.002-0.004 inches thick. The strands are then conveyed to green storage bins. No changes to this area are planned in this permit modification.

Strand Drying

From the green storage bins, the strands are conveyed to one of two single-pass rotary dryers to remove moisture from the strands. Air leaving the dryers is passed through two product recovery cyclones where the wood strands are separated from the gas stream. The gas streams from both of the dryers' cyclones are ducted to a wet electrostatic precipitator (WESP) to remove particulate matter then to a regenerative thermal oxidizer (RTO) to destroy volatile organic compounds (VOC).

The dried strands are then screened to remove fines and for further classification. The screened strands are stored in one of three dry bins. Fines are pneumatically conveyed to the dry fuel bin or the truck-loading bin. An emergency dump is available to discharge strands from the material conveying system in the event of operational issues such as plugs or a fire. Material from the bypass area can either be reclaimed as process material or as fuel for the wood-fired heat source.

Tests on controlled dryer emissions at the combined RTO stack, have demonstrated compliance with the 95% DRE for total VOC and 90% formaldehyde removal required by MACT.

Blending

The dried strands are conveyed from the dry storage bins to one of three blenders where they are mixed with resins, wax, and other additives. Reclaimed wood fines are mixed with wax and resin in a separate fines blender. Wax and resins are stored in bulk storage containers and tanks and piped directly into the blender.

Alternative resins and/or technologies (e.g., with lower HAPs VOCs, or criteria pollutant content) may be available in the future. HEW seeks the flexibility to change to resins and/or catalysts that will not cause allowable emissions to be exceeded, or will not result in emissions of new regulated pollutants.

Forming

From the blender, the strands are transported via conveyors to bulk storage forming bins. From these bins, the resinated strands are metered out onto a continuously moving forming line belt. During this process, the strands are mechanically oriented in one direction as they fall to the forming belt below. Subsequent forming heads form distinct layers in which the strands are oriented perpendicular to the previous layer of strands. Trim saws continuously cut the edges of the mat and the waste material is conveyed to the dry bins for recycling.

Pressing

The trimmed mat is conveyed into the preheater, which conditions the mat with steam. The mat then continues into the hot press, where the resinated fibers are compressed; heat and pressure activate the resins and bond the strands into a solid product.

The exhaust gases from the press area are captured from the points located at the pre-heater, the front entrance into the press, the exit from the press, and along the entire press length by a series of collection hoods. Exhaust from the pre-heater is routed through a dry cyclone and a WESP to collect particulate matter, then to the biofilter to remove VOCs. The gases from the press fume hood are directly conveyed to the biofilter. Exhaust gases from direct pickup points along the press and heat tunnel are conveyed to a WESP to remove particulates, then to the biofilter to remove VOCs.

From the press, the OSB product is then cut into master mats by a traveling saw and moved into the finishing area for further processing. Emissions from the section of the building that includes the board cooler are subject to NESHAP Subpart DDDD, *National Emission Standards for Hazardous Air Pollutants for Plywood and Composite Wood Products.* The Broken Bow Mill completed a case-by-case MACT determination in the initial construction permit application and complies with the MACT by maintaining negative air pressure within the press and board cooler room and using an add-on control system with HAP percent reduction limits at the outlet. With this application, the Mill does not seek a change in the MACT compliance method.

Product Finishing

The work in progress (WIP) panels are trimmed to final dimensions, sawed and sanded to various lengths, depending on product specifications. In some cases, an edge sealant is applied to the edges of the boards in a paint booth to prevent moisture absorption from occurring.

Some products produced at the Mill go through a "branding" operation where the product logo and nailing guidelines are sprayed onto the panels. HEW believes this branding process is a unique and differentiating feature of HEW's OSB products.

Energy System

Energy for the strand dryers and thermal oil heater is provided by two combustion furnaces fueled by bark and wood residuals, including sander dust and board from the process. Huber

also burns miscellaneous process biomass (wood fiber) and process materials including wood pallets, paper, cardboard, resinated board covered with paper overlay, used oil/grease, wax, off-specification resins, release agent, stamp ink, and other non-hazardous materials. A portion of flue gas (approximately 25%) exiting from the combustion furnaces passes through convection heat exchangers (Thermal Oil Heaters) that transfer heat to thermal fluid for use in heating the press and wax storage tanks. This portion of flue gas is returned to the inlet of the dryer or the furnace with other combustion air. Ash from the furnaces is collected in a wet bin and shipped offsite for disposal. The use of MUPF resin and associated catalysts will result in increased NO_x and SO_2 emissions due to the increased nitrogen and sulfur content in the wood waste that is used in the energy system. HEW applied emissions data from MUPF trials to estimate the additional emissions.

Miscellaneous Combustion Units

The Mill is equipped with a diesel fire pump, two emergency generators, a railcar steam generator and several air makeup units. These sources are operated intermittently on an as-needed basis.

Storage Tanks

The site includes wax storage tanks, resin storage tanks, catalyst storage tanks, resin bulk containers, release agent storage tanks, a release agent mix tank, a release agent recycle tank, and a caustic storage tank. The Mill also has storage tanks for gasoline, diesel, and propane used in vehicles that operate onsite. The Mill has converted five of the existing tanks to liquid resin storage. The affected tanks include: Resin Storage Tank Nos. 1, 3, and 5 (EP-RES1TK, EP-RES3TK, EP-RES5TK), Wax Storage Tank No. 1 (EP-WAX1TK) and Release Agent Storage Tank No. 2 (EP-RA2TK). As shown in the minor permit modification application submitted on September 19, 2006, the conversion of the storage tanks to LPF resins will add up to 1.89 TPY of VOC. MUPF resin MSDS indicate a formaldehyde content of 0.1% to 1.0%, (versus 0.1% for LPF resins), so annual formaldehyde emissions are estimated at an additional 34 pounds per year (0.01 TPY). No additional storage tanks are planned at this time.

Particulate Handling

Particulates are collected from various pneumatic conveying systems throughout the Mill. The separate systems include screening, forming, saws, sander, fuel, and the fines reclaim silo. Collected material is pneumatically conveyed to either the Dry Fuel Silo or Sander Dust Silo, where the material is stored before transfer to the heat source.

Fuel Storage Tanks

The site includes storage tanks for gasoline, diesel, and propane.

SECTION III. EQUIPMENT

Emissions Unit Group No. 1 was designated as the facility as a whole.

EUG 2 - COMBUSTION UNITS				
Emission Unit	**Point**	**EU Name/Model**	**Size**	**Construction**
EU-EG1	EP-EG1	Diesel Fired Emergency Generator #1	900-hp	2003
EU-EG2	EP-EG2	Diesel Fired Emergency Generator #2	900-hp	2003
EU-FP1	EP-FP1	Diesel Fired Fire Pump Engine	210-hp	2003
EU-SG1	EP-SG1	Gas Fired Rail Steam Generator	1.5 MMBTUH	2003
EU-AMU1 - 20	EP-AMU1 - 4	Gas Fired Air Make Up Units (4)	4.05 MMBTUH in Total	2003
	EP-AMU6 - 13	Gas Fired Air Make Up Units (8)	11.1 MMBTUH in Total	2003
	EP-AMU15 - 20	Gas Fired Air Make Up Units (6)	4.8 MMBTUH in Total	2003

EUG3 – Energy System/ Dryers				
Emission 1Unit	**Point**	**EU Name/Model**	**Size(MMBTUH)**	**Construction Date**
EU-HS1	EP-RTO1	Heat Source No. 1	150	2003
EU-DR1		Dryer No. 1	-	2003
EU-HS2		Heat Source No. 2	150	2003
EU-DR2		Dryer No. 2	-	2003

EUG 4 – PRESS				
Emission	**Point**	**EU Name/Model**	**Maximum Throughputs**	**Construction**
EU-PR1	EP-BF1	Press No. 1	110 MSF/hr OSB 3/8”	2003

EUG 5 - PM SYSTEMS				
Emission	**Point**	**EU Name/Model**	**Control**	**Const. Date**
EU-SYS9120	EP-FF2	Screening – System 9120	CD-FF2[1]	2003
EU-SYS9130	EP-FF3	Forming – System 9130	CD-FF3[2]	2003
EU-SYS9140	EP-FF4	Saws – System 9140	CD-FF4[3]	2003
EU-SYS9150	EP-FF5	Sander – System 9150	CD-FF5[4]	2003
EU-SYS9195	EP-FF6	Fuel – System 9195	CD-FF6[5]	2003

[1]Screening Fabric Filter, [2]Forming Fabric Filter, [3]Saws Fabric Filter, [4]Sander Fabric Filter, [5]Fuel Fabric Filter.

EUG 6 – TANKS				
Emission Unit	**Point**	**EU Name**	**Capacity/ Throughputs**	**Const. Date**
EU-GAS1TK	EP-GAS1TK	Gasoline Storage Tank No. 1	550-gal/ 20000 gal/yr	2003
EU-EG1TK	EP-EG1TK	Emergency Gen. No. 1 Diesel Tank	500-gal/ 13,850 gal/yr	2003
EU-EG2TK	EP-EG2TK	Emergency Gen. No. 2 Diesel Tank	500-gal/ 13,850 gal/yr	2003
EU-FP1TK	EP-FP1TK	Fire Pump Engine No. 1 Diesel Tank	250-gal/ 6,920 gal/yr	2003
EU-ME1TK	EP-ME1TK	Mobile Equipment Diesel Tank No. 1	1,000-gal 40,000 gal/yr	2003
EU-WAX2TK	EP-WAX2TK	Wax Storage Tank No. 2	25,000-gal each 41,000,000 lb/yr total	2003
EU-WAX3TK	EP-WAX3TK	Wax Storage Tank No. 3		2003
EU-RES2TK	EP-RES2TK	Resin Storage Tank No. 2	25,000-gal each 50,000,000 lb/yr	2003
EU-RES4TK	EP-RES4TK	Resin Storage Tank No. 4		2003
EU-RES6TK	EP-RES6TK	Resin Storage Tank No. 6		2003
EU-LPFRESIN	EP-WAX1TK	Wax or Resin Storage Tank	25,000-gal each 51,100,000 lb/yr total	2003
	EP-RES1TK	Resin Storage Tank No. 1		2003
	EP-RES3TK	Resin Storage Tank No. 3		2003
	EP-RES5TK	Resin Storage Tank No. 5		2003
	EP-RA2TK	Release Agent or Resin Storage Tank		2003
EU-RA1TK	EP-RA1TK	Release Agent Storage Tank No. 1	25,000-gal 3,200,000 lb/yr	2003
EU-CAU1TK	EP-CAU1TK	Caustic Storage Tank No. 1	10,000-gal/ 800,000 lb/yr	2003
EU-RAMIX1TK	EP-RAMIX1TK	Release Agent Mix Tank No. 1	1,000-gal/ 3,200,000 lb/yr	2003
EU-RAR1TK	EP-RAR1TK	Release Agent Recycle Tank 1	500-gal/ 3,200,000 lb/yr	2003

EUG 7 – BRANDING AND COATING OPERATIONS				
Emission Unit	**Point**	**EU Name/Model**	**Control**	**Const. Date**
EU-Coatings	Coating Fugitive	Paint Booth No. 1 Rim Board	Does not exhaust outside the building except for building vents	2003
		Paint Booth No. 2 Sander		2003
		Paint Booth No. 3 Finish/hand		2003
EU-Stamping	Stamp Fugitive	Stamp Fugitive		2003
EU-BRAND	EP-BRANDB1F	Branding operations	To atmosphere	2003

EUG 8 – BUILDING FUGITIVES				
Emission Unit	**Point**	**EU Name/Model**	**Control**	**Const. Date**
EU-WH1	EU-WH1	Warehouse Area	None	2003
EU-BL2	EU-BL2	Blending Area		2003
EU-FRM3	EU-FRM3	Forming Area		2003
EU-SRN4	EU-SRN4	Screening Area		2003
EU-GE5	EU-GE5	Green End Area		2003

EUG 9 – DRYER ABORT STACKS				
Emission Unit	**Point**	**EU Name/Model**	**Control**	**Const. Date**
EU-DA1	EU-DA1	Dryer 1 Abort Stack	None	2003
EU-DA2	EU-DA2	Dryer 2 Abort Stack		2003

EUG 10 – RADIANT BARRIER OPERATION			
Emission Unit	**Point**	**Control**	**Const. Date**
EU-RADIANT BARRIER	EP-BF1	Biofilter	2013

SECTION IV. EMISSIONS

Emission calculation methodology

VOC as emitted:

VOC emissions to show compliance with permit limits are calculated as follows:

- Subtract the methane determined by Method 18 from the THC as propane determined by Method 18 or Method 25A.
- Subtract predetermined responses of formaldehyde, phenol, and methanol from the THC as propane less methane. The remaining VOCs are assumed to be alpha and beta pinene, which fully respond on the THC monitor. The VOC mass emission rate is then calculated using the molecular weight of pinene.
- Determine the concentrations and rates of methanol, formaldehyde, and phenol using the Method 320 measured concentrations.
- Sum the pinenes, methanol, formaldehyde, and phenol rates and the resulting total is VOC as emitted rate.

However, MACT testing and emission calculation for MACT purposes will be based on the MACT specific methods.

PM_{10} as a Surrogate for $PM_{2.5}$

HEW has historically relied on the PM_{10} BACT and NAAQS analyses as a surrogate for $PM_{2.5}$. However, EPA has recently proposed rules to require applicants to demonstrate that it is reasonable to use PM_{10} as a surrogate for $PM_{2.5}$. EPA suggested two steps as a possible approach to demonstrating that PM_{10} is a reasonable surrogate for $PM_{2.5}$. First, the source should establish

in the record "a strong statistical relationship between PM_{10} and $PM_{2.5}$ emissions from the proposed unit, both with and without the proposed control technology in operation." Second, the permittee should show "that the degree of control of $PM_{2.5}$ by the control technology selected in the PM_{10} BACT analysis will be at least as effective as the technology that would have been selected if a BACT analysis specific to $PM_{2.5}$ emissions had been conducted." An analysis for the sources at the Broken Bow Mill is shown below:

Stranding, Debarking, and Green Bins
There are no data available (ie., AP-42, industry factors) that quantify PM_{10} emissions from these operations. HEW assumed that these emissions are negligible due to the high moisture content of the wood. Therefore, the emissions of $PM_{2.5}$ from these sources are negligible and no additional analysis is required.

Energy Systems/Dryers
The only PM speciation data Huber was able to identify for wood-fired furnaces is that in AP-42 (9/03), Chapter 1.6, Wood Residue Combustion in Boilers. This section provides uncontrolled PM speciation data from underfeed stokers in Table 1.6-5 that may be applicable to wood-fired units. Table 1.6-5 demonstrates that $PM_{2.5}$ emissions are approximately 84% of PM_{10} emissions. The BACT analysis identifies that the existing wet electrostatic precipitators achieve 75% control efficiency for PM_{10} emissions from the wood-fired energy system. In addition, the furnace and dryers at the Mill are routed to RTOs to control VOC and CO emissions. Since the RTOs achieve some destruction of condensable PM, some additional control of $PM_{2.5}$ is expected.

OSB Press Vent
AP-42 (3/2002), Chapter 10.6.1-Waferboard Oriented Strandboard provides no estimate of PM speciation for OSB presses. The BACT analysis for the OSB press indicates that PM_{10} control is cost prohibitive. Due to the lack of available data related to $PM_{2.5}$ emissions, Huber assumes that PM_{10} is an appropriate surrogate for $PM_{2.5}$ on OSB Press Vent.

PM Control Systems (Baghouses)
HEW was able to identify several sources of information related to the particle size distribution of wood dust. However, the distributions varied based on the testing equipment used, the type of wood sampled, and manner in which the wood was processed. Due to the lack of standardization in the particle size distribution determination process, Huber is unable to accurately determine $PM_{2.5}$ emissions using the particle size distribution data. The BACT analysis for PM control systems identifies baghouses as the best control type for these sources. Collection efficiencies in excess of 99.5% are achievable with fabric filters for particle sizes down to 1.0 micron. $PM_{2.5}$ modeling was conducted and results were acceptable and included in Permit No. 2003-099-(M-3) (PSD).

EMISSION POINTS

Discharge	Point	Height ft	Diameter ft	Temp ˚F	Velocity ft/sec
Regen. Thermal Oxidizer No. 1	EP-RTO1	80	10.00	240	51.60
Biofilter No. 1 Exhaust	EP-BF1	80	8.00	100	70.07
Screening Fabric Filter Exhaust	EP-FF2	43	3.17	70	71.95
Forming Fabric Filter Exhaust	EP-FF3	55	4.17	70	76.23
Saws Fabric Filter Exhaust	EP-FF4	55	4.17	70	67.80
Sander Fabric Filter Exhaust	EP-FF5	55	4.17	70	73.09
Fuel Fabric Filter Exhaust	EP-FF6	64	1.83	70	63.14
Fire Pump Engine #1 Exhaust	EP-FP1	12	0.67	1,030	214.86
Emergency Generator #1 Exhaust	EP-EG1	12	0.83	932	153.22
Emergency Generator #2 Exhaust	EP-EG2	12	0.83	932	153.22
Rail Steam Generator	EP-SG1	42	1.00	575	9.32
Branding Booth Exhaust	EP-BRANDB1F	73	1.33	70	226.35
Dryer 1 Abort Stack	EP-DA1	56	6.30	293	118.50
Dryer 2 Abort Stack	EP-DA2	56	6.30	293	118.50

EUG 2 – MISCELLANEOUS COMBUSTION UNITS

Emissions from the miscellaneous combustion sources (including a 210-hp diesel fire pump engine, two 900-hp diesel emergency generators, a rail steam generator and 18 air makeup units) were revised to accommodate more hours of operation for the fire pumps (EP-FP1) and emergency generators (EP-EG1 and -EG2). The pumps and generators are permitted to operate 240 hours per year. The allowable hours of operation for the other miscellaneous combustion units are 8,760 hrs/yr for the steam generator (EP-SG1) and 5,040 hrs/yr for the air make-up units (EP-AMU1 through -AMU18). Emission factors are based on AP-42 (10/96), Table 3.3-1 for diesel engines and AP-42 (7/98), Tables 1.4-1 and 1.4-2 for natural gas combustion units.

		NO_X		CO		Total PM_{10}		VOC		SO_2	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
210-hp Fire Pump Engine	EP-FP1	6.50	0.80	1.40	0.20	0.50	0.06	0.50	0.06	0.40	0.05
900-hp Emergency Generator #1	EP-EG1	27.90	3.30	6.00	0.70	2.00	0.20	2.20	0.30	1.80	0.20
900-hp Emergency Generator #2	EP-EG2	27.90	3.30	6.00	0.70	2.00	0.20	2.20	0.30	1.80	0.20
1.5 MMBtu/hr Rail Steam Generator	EP-SG1	0.10	0.60	0.10	0.50	0.01	0.05	0.08	0.03	0.001	0.004
19.95 MMBtu/hr Air Make Up Units (18)	EP-AMU1-4 EP-AMU6-13 EP-AMU15-20	1.96	4.90	1.60	4.10	0.15	0.37	0.10	0.30	0.00	0.00
Total		**64.36**	**12.9**	**15.1**	**6.2**	**4.66**	**0.88**	**5.08**	**0.99**	**4.00**	**0.45**

EUG 3 – ENERGY SYSTEM/DRYER UNITS

Emissions from this group are based on the following emission factors, maximum combined process rate of 80 ODT/hr (ODT means oven dried ton), 300 MMBtu/hr total heat input and operating hours of 8,760 hrs/yr.

Energy System/Dryer Emission Factor Summary

Emission Units	Pollutants	Emission Factors
RTO for Energy System and Dryers[1]	PM_{10}	0.23 lb/ODT
	NOx	2.57 lb/ODT
	CO	1.16 lb/ODT
	VOC	0.77 lb/ODT
	SO_2	0.18 lb/ODT
	Formaldehyde	0.06 lb/ODT
	Methanol	0.06 lb/ODT
	Acetaldehyde	0.02 lb/ODT
	Phenol	0.07 lb/ODT

[1] Emission factors calculated from MUPF trial stack test data with highest emission rates at Commerce GA except: PM from Broken Bow, Phenol from NCASI, and SO_2 calculated from mass balance representing emissions exiting the RTO outlet, after the primary cyclone and emission control devices and includes the contribution from the bark burner.

Energy System/Dryer RTO Criteria Pollutant Emissions

		NO_X		CO		Total PM_{10}		VOC as Emitted		SO_2	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
No. 1 Heat Source/Dryer	EP-RTO1	205.60	900.53	92.8	406.5	18.7	82.0	61.60	269.81	14.1	61.6
No. 2 Heat Source/Dryer											

Energy System/Dryer RTO Criteria HAP Emissions

		Formaldehyde		Methanol		Acetaldehyde		Phenol	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
No. 1 Heat Source/Dryer	EP-RTO1	4.80	21.0	4.60	19.90	1.20	5.30	5.30	23.10
No. 2 Heat Source/Dryer									

EUG 4 – PRESS

The use of MUPF resins will result in higher VOC and formaldehyde emission rates than the petroleum-based MDI resin mixed with PF resin currently in use at the plant. Updated estimates of VOC emissions from the press are based upon engineering data at Broken Bow and other Huber mills across the country, which indicate uncontrolled VOC emissions from the press of 1.05 lb VOC/$MSF_{3/8}$. Existing allowable VOC emissions (based on MDI resin usage) are listed in Permit No. 2003-99-C (M-2) at 0.31 lb VOC/$MSF_{3/8}$ (as emitted). Engineering test data accumulated during MUPF trial production runs indicate a DRE ranging from 68 percent to 84.7

percent while using MUPF. MUPF will also impact the emissions of other criteria pollutants. MUPF requires catalysts that contain both nitrogen and sulfur compounds. Potential increases of uncontrolled NO_x, ammonia and SO_2 emissions from the press have been addressed in a previous construction permit modification.

Press Emission Factors

Emission Units	Pollutants	Emission Factors	Sources
Press	Total PM_{10}	0.122 lb/MSF 3/8" basis	Avg. uncontrolled factors from other OSB facilities
	VOC as emitted	1.06 lb/MSF 3/8" basis	
	NOx	0.020 lb/MSF 3/8" basis	
	CO	0.024 lb/MSF 3/8" basis	
	SOx	0.010 lb/MSF 3/8" basis	
	HCOH	0.348 lb/MSF 3/8" basis	
	Phenol	0.06 lb/MSF 3/8" basis	
	Methanol	0.36 lb/MSF 3/8" basis	

Press Operating Parameters

Maximum Production Capacity ($MSF_{3/8}$/hr)	110
Hours of Operation (hrs/yr)	8,760
Biofilter methanol Control Efficiency (%)	90

Press Criteria Pollutant Emissions

		NO_X		CO		Total PM_{10}		VOC as Emitted		SO_X	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Press No. 1 (post control)	EP-BF1	2.20	9.60	2.60	11.60	13.40	58.7	46.6	204.3	1.1	4.80

Press HAP Emissions

		Formaldehyde		Phenol		Methanol	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Press No. 1 (post control)	EP-BF1	3.80	16.80	3.00	13.20	3.90	17.20

EUG 5 – PM CONTROL SYSTEMS (Baghouses)

PM_{10} emissions from this group are based on 0.005 gr/dscf grain loading tests at the OSB Mill and applicable flow rates and operating hours of 8,760 hrs/yr. Emission testing of the PM control systems indicates that VOC in addition to PM_{10} emissions are being emitted from the baghouses. Estimates of emissions from the various baghouses have been updated in accordance with available engineering test data.

VOC Emission Factors Obtained Through Stack Tests

Emission Unit	Point	VOC	Formaldehyde	Methanol
Screening – System 9120	EP-FF2	0.133 lb/ODT	0.002 lb/ODT	0.002 lb/ODT
Forming – System 9130	EP-FF3	0.124 $MSF_{3/8}$/hr	0.005 $MSF_{3/8}$/hr	0.062 $MSF_{3/8}$/hr
Saws – System 9140	EP-FF4	0.117 $MSF_{3/8}$/hr	0.006 $MSF_{3/8}$/hr	0.113 $MSF_{3/8}$/hr
Sander – System 9150	EP-FF5	0.102 $MSF_{3/8}$/hr	0.001 $MSF_{3/8}$/hr	0.002 $MSF_{3/8}$/hr

Baghouse Criteria Pollutant Emissions

Emission Unit	Point	PM_{10} Emissions		VOC Emissions	
		lb/hr	TPY	lb/hr	TPY
Screening – System 9120	EP-FF2	1.46	6.40	25.30	110.90
Forming – System 9130	EP-FF3	2.68	11.73	17.40	76.20
Saws – System 9140	EP-FF4	2.38	10.43	29.20	127.70
Sander – System 9150	EP-FF5	2.57	11.24	9.70	42.40
Fuel – System 9195	EP-FF6	0.43	1.87	0.90	3.90
Subtotal		**9. 52**	**41. 67**	**82.50**	**361.10**

Baghouse HAP Emissions

Emission Unit	Point	Formaldehyde		Methanol	
		lb/hr	TPY	lb/hr	TPY
Screening – System 9120	EP-FF2	0.20	0.60	0.40	1.70
Forming – System 9130	EP-FF3	1.30	5.80	8.60	37.80
Saws – System 9140	EP-FF4	1.20	5.30	15.90	69.40
Sander – System 9150	EP-FF5	0.60	2.20	0.90	4.20
Fuel – System 9195	EP-FF6	0	0	0	0
Subtotal		**3.30**	**13.90**	**25.80**	**113.10**

EUG 6 – TANKS

Permit No. 2003-099-C (M-2) authorized HEW to convert five 25,000-gallon storage tanks (EP-RES1TK, EP-RES3TK, EP-RES5TK, EP-WAX1TK, and EP-RA2TK) to LPF storage. HEW will utilize one or more of these tanks to store MUPF. The conversion of the storage tank to MUPF from LPF resins is not expected to add significant VOC emissions. The MSDS from MUPF resin indicates that the product contains up to 1% formaldehyde, so formaldehyde emissions are expected to increase by 34 lb/year or 0.017 TPY. Storage tank VOC emissions were calculated using the EPA program, "TANKS4.0d" and the previously listed throughput limits.

Emission Unit	Point	VOC	
		lb/hr	**TPY**
Mobile Diesel Tank	EP-ME1TK	0.02	<0.01
Fire Pump Diesel Tank	EP-FP1TK	0.01	<0.01
Emer. Gen. 1 Diesel Tank	EP-EG1TK	0.02	<0.01
Emer. Gen. 2 Diesel Tank	EP-EG2TK	0.02	<0.01
Gasoline Tank	EP-GAS1TK	4.23	0.11
Caustic Tank	EP-CAU1TK	0.01	0.01
Urea Tank	EP-UR1TK	2.03	0.02
Resin Tank No. 2	EP-RES2TK	0.01	0.01
Resin Tank No. 4	EP-RES4TK		
Resin Tank No. 6	EP-RES6TK		
Resin Tank No. 1	EP-RES1TK	0.43 (LPF)	1.89 (LPF)
Resin Tank No. 3	EP-RES3TK		
Resin Tank No. 5	EP-RES5TK		
Resin Tank No. 7	EP-RES7TK		
Release Agent Tank No. 2	EP-RA2TK		
Wax Tank No. 1	EP-WAX1TK	0.002	<0.01
Wax Tank No. 2	EP-WAX2TK		
Release Agent Tank No. 1	EP-RA1TK	2.2	0.05
Release Agent Tank No. 2	EP-RA2TK		
Release Agent Mix Tank	EP-RAMIXTK	0.18	0.05
Release Agent Rec. Tank	EP-RAR1TK	0.09	0.05
Subtotal		**9. 25**	**2.24**

EUG 7 – BRANDING AND COATING OPERATIONS

Emissions from coating and branding operations are based on a 12 month rolling average of VOC emissions calculated from a monthly mass balance. PM emissions are negligible since the coating operations are equipped with fabric filters that exhaust inside the building and the branding ink is applied with an industrial ink jet printer.

Branding and Coating Operations	Point	VOC	
		lb/hr	**TPY**
Branding	BRAND	1.8	7.5
Coatings	Coat Fugitive	0.734	3.58
Stamping	Stamp Fugitive	0.03	3.9
Total		**2.564**	**14.98**

EUG 8 – FUGITIVE BUILDING EMISSIONS

Through Industrial Hygiene (IH) testing at another mill, HEW has determined that VOCs exist inside the finishing, warehouse, and certain production areas not covered by the MACT standard. Product testing indicates that the VOCs from the wood strands and various resins may continue to be emitted as the product cures in the finishing stages and the warehouse. HEW used the

available (IH) sampling data from existing HEW facilities on the assumption that they are representative of concentrations that may occur at Broken Bow Mill based on exhaust fan rates.

Emission Factors

Area	VOC	Methanol	Formaldehyde	PM_{10}
	mg/m^3	mg/m^3	mg/m^3	mg/m^3
Warehouse	3.45	0.23	0.0947	0.06
Blending	6.97	2.96	0.169	0.13
Forming	12.33	6.32	0.31	0.18
Screening	12.1	-	-	0.21
Green End	-	-	-	0.21

Emissions

Area	Flow	VOC		Methanol		Formaldehyde		PM_{10}	
	cf/minute	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Warehouse	240,000	3.10	13.56	0.21	0.90	0.09	0.37	0.05	0.24
Blending	180,000	4.69	20.55	1.99	8.73	0.11	0.50	0.09	0.38
Forming	90,000	4.15	18.18	2.13	9.32	0.10	0.46	0.06	0.27
Screening	60,000	2.72	11.89	--	--	--	--	0.05	0.21
Green End	10,300	2.74	12.00	--	--	--	--	0.01	0.04
Total		**17.40**	**76.18**	**4.33**	**18.95**	**0.30**	**1.33**	**0.26**	**1.14**

EUG 9 – STARTUP, SHUTDOWN, AND MAINTENANCE EMISSIONS FROM DRYER ABORT STACKS (INCLUDE HEAT SOURCE EMISSIONS)

The two rotary dryer systems each have an abort stack located after the dryer cyclones and before the WESP. These abort stacks are normally closed, but may open under various operating conditions and when control equipment is under maintenance . HAP emissions from the dryer abort events are covered by the Mill's Startup, Shutdown, and Malfunction (SSM) plan. Emissions listed in the following table represent emissions from maintenance related aborts which will include the cleaning of facility air abatement equipment, such as ducts, dampers, fans, WESPs, RTOs, demister pads etc. This is not an exhaustive list and may include other plant maintenance activities that arise. Hourly emissions are calculated based upon the maximum dryer operating rate.

EUG 9 Dryer Abort Stacks (Includes Heat Source)
Startup, Shutdown, and Maintenance Emissions

		PM_{10}	NO_x	CO	VOC as emitted	SO_2
Uncontrolled Emissions Factors	lb/ODT	2.29 (1)	2.55 (2)	2.25 (3)	6.30 (4)	0.18(5)
Maximum Dryer Emissions Rate (at 80 ODT/hr)	lb/hr	183	204	180	504	14
Allowable Annual Abort Emissions	TPY	18.3	20.4	18.0	50.4	1.4

Note (1) The PM_{10} emission factor was derived from the average of total PM samples collected at the inlet to the WESPs in August 2004, normalized up to 80 ODT/HR and reduced by 28.6% based on the ratio of Total PM to PM_{10} as reported in AP42 Table 1.6-1.
Note (2) NOx emission factor derived from highest HEW NOx emission factor during MUPF resin trials at Commerce, GA plus 20% safety factor.
Note (3) CO emission factor derived from AP42 Table 1.6-2 Emissions Factors for Wood Residue Combustion because these emissions are generated in the furnace.
Note (4) The VOC emission factor was derived from the average of total VOC samples collected at the inlet to theWESPs in August and October 2004 and August 2006, normalized up to 80 ODT/HR.
Note (5) The SO_2 emission factor was derived from a site specific mass balance.

EUG 10 – RADIANT BARRIER APPLICATION OPERATION

Radiant barrier will be applied by laminating a light weight foil in a primarily post press process. The process will apply a foil backing to the underside of the oriented strand board, while utilizing a polyvinyl acetate (PVA) compliant glue to adhere the foil to the product. The laminating equipment will be inside the press enclosure but is independent of the press operation and will operate intermittently as demand requires. When operated, emissions from the radiant barrier process will be routed along with the press emissions through the biofilter.

The applicant has the capability to apply the glue either by using a roll coater application or by using a pump with spray nozzles. Since spray nozzles produces higher glue application rates, the applicant chose spray nozzles to represent worst case scenarios for calculated potential to emit. Uncontrolled potential VOC emissions are based on maximum glue flow rate at nozzle (7 gal/min), VOC content of the glue (0.1% by weight), glue density of 8.8 lb/gal, and continuous operation of the nozzle at 8,760 hr/yr. Proposed emissions are based on continuous operation of 8,760 hr/yr with an added 20% safety factor, and assuming 50% biofilter DRE.

EUG 10 Potential VOC Emissions

Source	Uncontrolled Potential VOC Emissions as emitted		Proposed Controlled VOC Emissions as emitted	
	lb/hr	TPY	lb/hr	TPY
Radiant Barrier Operation	3.7	16.19	2.17	9.5

FACILITY WIDE CRITERIA POLLUTANT EMISSIONS

Emission Groups	NOx		CO		Total PM_{10}		VOC		SO_2	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
EUG 2	64.8	14.2	15.6	7.2	4.6	1.01	5.08	0.99	4.01	0.49
EUG 3	205.60	900.53	92.8	406.5	18.70	82.0	61.60	269.81	14.1	61.6
EUG 4	2.20	9.60	2.60	11.60	13.40	58.70	46.60	204.30	1.10	4.80
EUG 5	0.00	0.00	0.00	0.00	9.51	41.66	82.50	361.10	0.00	0.00
EUG 6	0.00	0.00	0.00	0.00	0.00	0.00	9.24	2.24	0.00	0.00
EUG 7	0.00	0.00	0.00	0.00	0	0	2.56	14.98	0.00	0.00
EUG 8	0.00	0.00	0.00	0.00	0.26	1.13	17.40	76.21	0.00	0.00
EUG 9	204.0	20.4	180.0	18.0	182.8	18.3	504.0	50.4	14.1	1.4
EUG10	-	-	-	-	-	-	2. 17	9.50	-	-
Total	**476.6**	**944.73**	**291**	**443.3**	**229.27**	**202.08**	**731.15**	**989.53**	**33.31**	**68.29**

Applicant also estimated $PM_{2.5}$ emissions as listed in the following table.

Emission Groups	$PM_{2.5}$	
	lb/hr	**TPY**
EUG 2	4.61	20.19
EUG 3	16.30	71.39
EUG 4	7.50	32.85
EUG 5	4.75	20.81
EUG 6	0	0
EUG 7	0.001	0.004
EUG 8	0	0
EUG 9	39.8	3.98
EUG-10	0	0
Total	**72.961**	**149.224**

Facility Wide HAP Emissions

Unit	Formaldehyde		Methanol		Acetaldehyde		Phenol	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
EUG3	4.80	21.02	4.55	19.93	1.20	5.26	5.28	23.13
EUG4	3.83	16.77	3.93	17.20	-	-	3.03	13.25
EUG5	3.32	13.90	25.80	113.10	-	-	-	-
EUG 8	0.30	1.33	4.33	18.95	-	-	-	-
EUG-9	160.00	16.00	8.00	0.80	8.80	0.88	1.20	0.12
Total	**172.25**	**69.02**	**46.61**	**169.98**	**10.00**	**6.14**	**9.51**	**36.50**

EPA's Tailoring rule became effective on January 2, 2011. HEW provided revised CO_2 emission estimates for each unit and BACT analysis as addressed in SECTION V.

Combustion source CO_2 emissions

Emission Unit	Fuel Type	Maximum Heat Input Capacity
		MMBtu/hr[a]
Energy System/Dryers	Biomass	300
RTO Burners[b]	Natural Gas	84
Fire Pump	Diesel	1.47
Emergency Generators #1	Diesel	6.3
Emergency Generators #2	Diesel	6.3
Railcar Steam Generator	Natural Gas	1.5
Air Makeup Units (all)	Natural Gas	19.95

[a]Heat input for fuel burning equipment based upon average brake-specific fuel consumption of 7,000 Btu/hp-hr (AP-42, Table 3.3-1 (10/96)).[b]Emissions from the energy sources and dryers are controlled by five RTOs with two burners each with a maximum heat input capacity of 8.4 MMBtu/hr per burner.

Greenhouse Gas	Natural Gas Emission Factor[a]	Biomass Emission Factor[a]	Diesel Emission Factor[a]	Global Warming Potential[b]
	(Kg/MMBtu)	(Kg/MMBtu)	(Kg/MMBtu)	(GWP)
CO_2	53.06	93.8	73.96	1
CH_4	1.00E-03	3.20E-02	3.00E-03	25
N_2O	1.00E-04	4.20E-03	6.00E-04	298

[a]GHG emission factors from the GHG Mandatory Reporting rule (40 CFR Part 98) Subpart C, Table C-1 and C-2, October 30, 2009.
[b]Global Warming Potentials are from the GHG Mandatory Reporting rule (40 CFR Part 98) Subpart A, Table A-1, October 30, 2009.

The energy system/dryers are controlled by a regenerative thermal oxidizer (RTO). Emissions from the energy source/dryers and the RTO burners are being emitted through a common exhaust stack. As such, emissions from the RTO burners cannot be separated from those of the energy source and dryers and are therefore combined together with the energy source and dryers here and in the BACT analysis.

Emission Unit	Fuel Type	CO_2[a]	CH_4[b]	N_2O[c]	CO_2e[d]
		TPY	**TPY**	**TPY**	**TPY**
Energy System/Dryers	Biomass	271,728.21	92.70	12.17	277,671.47
RTO Burners	Natural Gas	43,038.50	0.81	0.08	43082.95
Fire pump & Emergency Generators	Diesel	275.30	0.01	0.00	276.25
Railcar Steam Generator	Natural Gas	768.54	0.01	0.00	769.34
Air Makeup Units	Diesel	5880.95	0.11	0.01	5887.02
Total		321,691.51	93.65	12.26	327,687.03

[a] Based on Equation C-2a from the GHG Mandatory Reporting Rule Subpart C, October 30, 2009.
[b] Based on Equation C-9a from the GHG Mandatory Reporting Rule Subpart C, October 30, 2009.
[c] Based on Equation C-9a from the GHG Mandatory Reporting Rule Subpart C, October 30, 2009.
[d] Based on Equation A-1 from the GHG Mandatory Reporting Rule Subpart A, October 30, 2009.

Biofilter CO_2 Emissions

CO_2 emissions are based on worst case assumption that 100% of VOC controlled by the biofilter is converted to CO_2.

Pollutant	Controlled (lb/hr)	Molecular Weight	VOC as Pinene to CO_2 Conversion Factor	CO_2 Molecular Weight	CO_2 Production (%)	CO_2 Emissions	
						lb/hr	TPY
VOC	69.96	136	69.96	44	100	226.34	991.37

SECTION V. BEST AVAILABLE CONTROL TECHNOLOGY FOR CO_2e

Any major stationary source or major modification subject to federal PSD review must conduct an analysis to ensure the implementation of BACT. This permit is a relaxation to the CO_2e emission limit of existing PSD permit no. 2003-099-C (M-3) PSD, thus BACT for CO_2e is revisited here. The requirement to conduct a BACT analysis can be found in the Clean Air Act itself, in the federal regulations implementing the PSD program, in the regulations governing federal approval of state PSD programs, and in Oklahoma regulations. The State of Oklahoma defines BACT in OAC 252:100-8-1.1, as follows:

"...the control technology to be applied for a major source or modification is the best that is available as determined by the Director on a case-by-case basis taking into account energy, environmental, and economic impacts and other costs of alternate control systems."

Although BACT is determined by evaluating control technologies to determine which are technically and economically feasible, BACT is an emission limit, not the use of a specific technology. The BACT requirement applies to each individual new or modified affected emissions unit and pollutant emitting activity at which a net emissions increase would occur. Individual BACT determinations are performed for each pollutant subject to a PSD review emitted from the same emission unit. Consequently, the BACT determination must separately address, for each regulated pollutant with a significant emissions increase at the source, air pollution controls for each emissions unit or pollutant emitting activity subject to review. The following table summarizes the units and pollutants that will be subjected to BACT determination.

In a memorandum dated December 1, 1987, U.S. EPA stated its preference for a "top-down" analysis (U.S. EPA, Office of Air and Radiation, Memorandum from J.C. Potter to the Regional Administrators. Washington, D.C. December 1, 1987). After determining whether any NSPS is applicable, the first step in this approach is to determine for the emissions unit in question, the most stringent control available for a similar or identical source or source category. If it can be shown that this level of control is technically or economically infeasible for the unit in question, the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic concerns. The five basic steps of a top down BACT review procedure as identified by U.S. EPA in the March 15, 1990, Draft BACT Guidelines are as follows (U.S. EPA, Draft BACT Guidelines. (Research Triangle Park, NC). March 15, 1990):

Step 1. Identify all control technologies
Step 2. Eliminate technically infeasible options
Step 3. Rank remaining control technologies by control effectiveness
Step 4. Evaluate most effective controls and document results
Step 5. Select BACT

U.S. EPA has consistently interpreted statutory and regulatory BACT definitions as containing two core requirements that the agency believes must be met by any BACT determination, regardless of whether it is conducted in a "top-down" manner. First, the BACT analysis must include consideration of the most stringent available control technologies (i.e., those which provide the "maximum degree of emissions reduction"). Second, any decision to require a lesser degree of emissions reduction must be justified by an objective analysis of "energy, environmental, and economic impacts (U.S. EPA, Office of Air and Radiation, Memorandum from J.C. Potter to the Regional Administrators. Washington, D.C. December 1, 1987)".

Potentially applicable emission control technologies were identified by researching the U.S. EPA control technology database, technical literature, and control equipment vendor information and by using process knowledge and engineering experience. The Reasonably Available Control Technology (RACT)/BACT/Lowest Achievable Emission Rate (LAER) Clearinghouse (RBLC), a database made available to the public through the U.S. EPA's Office of Air Quality Planning

and Standards (OAQPS) Technology Transfer Network (TTN), lists technologies that have been approved in PSD permits as BACT for numerous types of process units.

EPA clarified that the scope of the BACT should focus on the project's largest contributors to CO_2e and may subject less significant contributors for CO_2e to less stringent BACT review (e.g., methane from fugitive components). Because the emissions of GHG for these projects are dominated by combustion sources and the biofilter, this BACT analysis focuses on these predominant sources of CO_2e. In addition, only CO_2 reduction was addressed since it represents more than 99% of the GHG emissions from these sources.

Energy Source/Dryers and RTO Burners

As stated in the emission section, the energy source/dryers are controlled by a regenerative thermal oxidizer (RTO) and emissions from the energy source/dryers and the RTO burners are being emitted through a common exhaust stack. As such, emissions from the RTO burners cannot be separated from those of the energy source and dryers and are therefore combined together with the energy source and dryers for the BACT analysis.

1. Identify All Control Technologies

The following table summarizes the potential CO_2e control strategies for combustion sources that will be analyzed as part of this BACT analysis.

Pollutant	Control Technologies
CO_2e	Fuel Selection
	Energy Efficiency Options
	Good Combustion/Operating Practice
	Carbon Capture & Sequestration (CCS)

2. Eliminate Technically Infeasible Control Options

Fuel Selection

The combustion units are designed to combust waste biomass, which means that there are no other fuel types that would be applicable for consideration. Therefore, biomass is the only technically feasible fuel option. This selection is consistent with EPA's bioenergy guidance, which does not require the selection of cleaner fuels if it means that a permit applicant would need to switch to a primary fuel type other than the fuel proposed for use in the primary combustion process.

Energy Efficiency Options

Operating practices that increase energy efficiency are a potential control option for improving the fuel efficiency of the energy system and dryers and, therefore, providing benefit with respect to GHG emissions.
In March 2011, the EPA provided a white paper that addresses control technologies, energy efficiency measures, and fuel switching options for industrial, commercial and institutional

boilers. Several of the energy efficiency options for boilers discussed in this document were also listed in the EPA's white paper specifically directed to the pulp and paper industry. These options primarily focus on improved process control, reduced heat loss, and improved heat recovery, and are expected to be part of the design of "state-of-the-art boiler systems." The energy efficiency options listed in the GHG BACT Guidance for the Pulp and Paper Industry are:

- Burner replacement (for existing units);
- Boiler maintenance;
- Boiler process control;
- Condensate return;
- Reduction of flue gas quantities;
- Minimizing boiler blow down;
- Reduction of excess air;
- Blow down steam recovery;
- Improved boiler insulation; and
- Flue gas heat recovery.

While HEW is not in the pulp industry and the energy system is not classified as a boiler, but rather a heat source (and is subject to 40 CFR 60 Subpart Db), it is reasonable to draw comparisons between these source types. Therefore, HEW is proceeding with the aforementioned energy efficiency options as they would apply to the energy system. Some of the energy efficiency options are not technically feasible for CO_2 control from the energy system and dryers and are discussed below.

- Burner replacement – there is no burner in the heat source of the energy system, therefore it is not technically feasible to replace the burner;
- Condensate return – the heat source is not equipped with condensate returns;
- Minimizing boiler blow down – the heat source is not equipped with blow down capabilities; and
- Blow down steam recovery – the heat source is not equipped with blow down capabilities;

Each of the remaining energy efficiency options is technically feasible for CO_2 control from the HEW energy system and dryers and is discussed further in this analysis.

Good Combustion/Operating Practices

The Mill operates the wood-fired furnace as efficiently as possible in order to provide sufficient heat to the dryers and minimize the need to purchase additional fuel from external sources. Therefore, good combustion/operating practice is a technically feasible control option.

Carbon Capture & Sequestration (CCS)

For the purposes of a BACT analysis for GHGs, EPA classifies CCS as an add-on pollution control technology that is available for facilities emitting CO_2 in large amounts, including fossil fuel-fired power plants, and for industrial facilities with high-purity CO_2 streams. However,

according to the "PSD and Title V Permitting Guidance for Greenhouse Gases (March 2011)", EPA acknowledges that at this time, CCS is not technically feasible in certain cases. CCS is composed of three main components: CO_2 capture and/or compression, transport, and storage. CCS may be eliminated from a BACT analysis if the three components working together are deemed technically infeasible, taking into account site specific considerations such as access to an existing pipeline, access to suitable geologic reservoirs for sequestration, or other storage options.

Geologic CO_2 storage is not a feasible technology because CO_2 storage systems are still in the testing phase of development by the DOE. Until this testing is complete, geologic carbon storage is not considered to have been operated successfully or therefore available. Carbon sequestration poses a number of issues before the technology can be safely and effectively deployed on commercial scale. For example, the following items still need to be proven and documented on a large-scale (greater than 1 million metric tons CO_2 injected).

- Permanent storage must be proven by validating that CO_2 will be contained in the target formations.
- Technologies and protocols must be developed to quantify potential releases and to confirm that the projects do not adversely impact underground sources of drinking water (USDWs) or cause CO_2 to be released to the atmosphere.
- Long term monitoring of the migration of CO_2 during and after project completion must be completed. Methodologies to determine the presence/absence of release pathways must be developed.
- Effective regulatory and legal framework must be developed for the safe, long term injection and storage of CO_2 into geological formations.

Large-scale (greater than 1 million metric tons CO_2 injected) sequestration projects using carbon sequestration are at the early stages of testing and development. It is still unclear, at this time, what the long term outcome of these projects will be. The National Energy Technology Laboratory (NETL), which is part of the DOE's national laboratory system, is currently working on (and in some instances economically supporting) a number of large-scale field tests in different geologic storage formations to confirm that CO_2 capture, transportation, injection, and storage can be achieved safely, permanently, and economically over extended periods of time. However, according to the NETL, carbon sequestration technologies will not be ready for commercial deployment until 2020. Hence, such technologies are not considered available or technically feasible.

In addition, CO_2 injection associated with EOR is considered technically infeasible for the long term storage of CO_2 for a variety of reasons. Developing a field for EOR requires an extensive undertaking which requires a large reservoir of CO_2 to accomplish. The output of CO_2 from the biomass combustion would occur at a steady rate year-over-year, while the CO_2 demand for an EOR well system would peak during the initial years of the project and substantially decline over time. As more CO_2 is injected, the CO_2 concentration of the recovered oil products would increase. This increased CO_2 must be separated from the product and either vented or recycled back into the well. Since venting the CO_2 stream would contradict the overall goal of this GHG control strategy, the CO_2 would be reinjected into the well. This increasing quantity of recycled

CO_2 would offset the need for additional CO_2 from outside sources (e.g., biomass combustion units). Such a declining-demand system is not a technically feasible long-term control option for a constant stream of CO_2.

CO_2 transportation is considered technically infeasible for the Mill because there are no means to transport large volumes of CO_2 (e.g., no CO_2 pipeline) to any of the known potential sequestration sites. Logistical hurdles associated with the implementation of EOR technology include obtaining the required permits, acquiring right-of-way for a new CO_2 pipeline, securing funding (including potential government funding), identifying a suitable CO_2 storage site and securing a lease or title to that site.

The above considerations exclude the establishment of a pipeline to reach either the closest sequestration sites or already existing CO_2 pipelines which is not guaranteed. The EPA's PSD and Title V Permitting Guidance for Greenhouse Gases published in March, 2011 states that:

Based on these considerations, a permitting authority may conclude that CCS is not applicable to a particular source, and consequently not technically feasible, even if the type of equipment needed to accomplish the compression, capture, and storage of GHGs are determined to be generally available from commercial vendors.

Based on the current state of sequestration technologies and the limited availability of transport opportunities, CCS technology, as a whole, is considered technically infeasible for the Mill at this time.

3. Rank Remaining Control Options by Effectiveness

Since all feasible options are employed, it is not necessary to rank them.

4. Top-Down Evaluation of Control Options

Through the use of waste biomass from the OSB production process, the Mill does not require the combustion of fossil fuels with greater CO_2e emissions and does not require additional energy input to dispose of the waste biomass. Therefore, biomass is the best fuel selection for the facility from an efficiency and heat rate standpoint given the process heat requirements for the facility.

It is in the best interest of the Mill to operate the wood-fired furnaces as efficiently as possible in order to reduce the amount of fuel required to meet the process heat requirements of the facility and minimize the need to purchase fuel from external sources. Therefore, the Mill utilizes good combustion/operating practices to maximize efficiency and reduce CO_2e emissions.

No adverse energy, environmental, or economic impacts are associated with the combustion of biomass, good combustion/operating practices, and energy efficiency options for reducing CO_2e emissions from the wood-fired furnace.

5. Select CO_2e BACT for Energy Source/Dryers

Based on the above analysis, HEW is proposing BACT for the wood-fired furnace to be use of biomass fuel, good combustion/operating practices in accordance with manufacturer's guidance, and the operation of the energy efficiency options outlined in the table below, output-based emission limit of 792.44 lb/ODT, and input-based emission limit of 117.10 lb/MMBTU for the RTO.

Energy Efficiency Option	Features of Energy System and Dryers
Heat source maintenance	This heat source and auxiliary equipment will be maintained per the manufacturer's recommendations.
Heat source process control	The heat source is equipped with underfire fans, overfire fans, O_2 sensors and thermocouples for efficient operation.
Reduction of flue gas quantities	All ducts and flanges will be routinely maintained to minimize flue gas leakage.
Reduction of excess air	The heat source is constructed of metal and internally insulated with refractory to minimize loss of efficiency.
Improved insulation	The heat source is insulated with refractory to conserve heat, protect personnel, and prevent corrosion.
Flue gas heat recovery	Flue gases are re-circulated through the system for energy efficiency.

Natural Gas & Diesel Fuel Sources

1. Identify All Control Technologies

The other combustion sources at the facility include the fire pump, two emergency generators, a railcar steam generator, and 18 air makeup units. These sources produce relatively insignificant total potential emissions (less than 450 TPY CO_2e). Rather than address the individual components, the total CO_2e amount was considered due to the relatively small methane and nitrous oxide emissions. The following table summarizes the potential CO_2e control strategies of natural gas and diesel fuel combustion sources.

Pollutant	Control Technologies
CO_2e	Fuel Selection
	Good Combustion/Operating Practices
	Carbon Capture & Sequestration (CCS)

2. Eliminate Technically Infeasible Control Options

Fuel Selection

Natural gas has the lowest carbon intensity of any available fuel for the combustion units. The diesel-fired units are for emergency use; therefore, natural gas is not an applicable fuel source for these units.

Good Combustion/Operating Practices

Good combustion/operating practices is a potential control option for improving the combustion efficiency of these sources and it is HEW's position that operating the units in a manner that maximizes efficiency will in turn minimize CO_2e emissions.

Carbon Capture and Sequestration

Due to the arguments presented in the previous BACT analysis, CCS is not technically feasible. Therefore it is not addressed again in this BACT analysis.

3. Rank Remaining Control Options by Effectiveness

Good combustion/operating practices is the only CO_2e control option for the Mill. Since only one option is being considered no ranking is necessary.

4. Top-Down Evaluation of Control Options

It is in the best interest of the facility to operate the natural gas and diesel-fired sources as efficiently as possible in order to reduce the amount of fuel required to meet the process heat requirements of the facility. No adverse energy, environmental, or economic impacts are associated with good combustion/operating practices.

5. Select CO_2e BACT for Natural Gas and Diesel-Fired Sources

Based on the above analysis, HEW had determined BACT for the natural gas and diesel-fired sources to be fuel selection, good combustion/operating practices in accordance with manufacturer's guidance, and input-based emission limits as listed in the following table.

Source	**Proposed GHG Input-Based Limit**
Fire Pump Engine & Emergency Generators	163.61 lb/MMBTU
Railcar Steam Generator	117.10 lb/MMBTU
Air Makeup Units	117.10 lb/MMBTU

The Press Biofilter

1. Identify All Control Technologies

Emissions of VOC from the Press are controlled by a biofilter. The microbial decomposition of VOC in a biofilter produces CO_2 emissions that will vary from species to species as well as from carbon source to carbon source. In addition, the growing conditions of the organisms will also greatly influence the distribution of carbon between CO_2 and other carbon based cellular components (e.g., proteins, lipids, etc.). There is considerable evidence to support a wide range of distributions between CO_2 production and the production of cell material depending on the

carbon source being metabolized. HEW previously provided emissions estimates for a variety of scenarios ranging from assuming all VOC is propane and the system has a 30 percent CO_2 production rate to the most conservative scenario evaluated of VOC as propane and the system having a 100 percent CO_2 production rate. In evaluating these extreme cases, HEW developed potential emissions ranging from 92 tpy to 306 tpy of CO_2. However, HEW now believes the most conservative method of calculation is to assume all VOC is pinene and that 100% of the VOC sent to the biofilter is converted to CO_2. This assumption results in calculated CO_2 emissions of 991 tpy from the biofilter. While this change in calculation methodology results in an increase in CO_2 emissions, 991 tpy is still a relatively small amount of CO_2. With such a small amount of emissions coming from the biofilter, additional control of emissions would be both economically and technically infeasible. To demonstrate that alternative control options were considered and are infeasible, HEW is providing the following BACT analysis for the biofilter at the Mill. The following table summarizes the potential CO_2 control strategies for the biofilter analyzed as part of this BACT analysis.

The following table summarizes the potential CO_2e control strategies.

Pollutant	Control Technologies
CO_2e	Carbon Capture and Sequestration (CCS)
	Good Operating Practices

2. Eliminate Technically Infeasible Control Options

Carbon Capture and Sequestration

Due to the arguments presented in the previous BACT analysis, CCS is not technically feasible. Therefore it is not addressed again in this BACT analysis.

Good Operating Practices

The primary purpose of the biofilter is to control VOC emissions from the Press by converting them to CO_2. For illustrative purposes, assuming the VOC is pinene, the chemical equation is:

$$C_{10}H_{16} + 14O_2 \rightarrow 10CO_2 + 8H_2O$$

Thus, good operating practices for the biofilter actually results in increased CO_2 emissions.

Since the biofilter acts a BACT control device for the Press, the Mill operates the biofilter as efficiently as possible in order to minimize VOC emissions associated with the Press. Good operating practices to reduce Press VOC emissions inherently result in increased CO_2 emissions from the biofilter. Therefore, good operating practices as a means to reduce CO_2 emissions from the biofilter is a technically infeasible control option.

3. Select CO_2e BACT for The Press Biofilter

Based on the above analysis, HEW proposes BACT to be operating the biofilter in accordance with the manufacturer's guidance to reduce VOC emissions from the press.

SECTION VI. INSIGNIFICANT ACTIVITIES

The insignificant activities identified and justified in the application and listed in OAC 252:100-8, Appendix I, are listed below. Recordkeeping requirements for activities indicated with an asterisk "*" are listed in the Specific Conditions.

- * Stationary reciprocating engines burning natural gas, gasoline, aircraft fuels, or diesel fuel are used exclusively for emergency power generation or for peaking power service not exceeding 500 hours per year.
- Space heaters, boilers, process heaters, and emergency flares less than or equal to 5 MMBTUH heat input (commercial natural gas). Various space heaters are in this category.
- * Emissions from fuel storage/dispensing equipment operated solely for facility-owned vehicles if fuel throughput is not more than 2,175 gallons/day, averaged over a 30-day period.

- * Storage tanks with less than or equal to 10,000 gallons capacity that store volatile organic liquids with a true vapor pressure less than or equal to 1.0 psia at maximum storage temperature.
- Gasoline and aircraft fuel handling facilities, equipment, and storage tanks except those subject to New Source Performance Standards and standards OAC 252:100-39-30, 39-41, and 39-48.
- Emissions from storage tanks constructed with a capacity less than 39,894 gallons which store VOC with a vapor pressure less than 1.5 psia at maximum storage temperature.
- Cold degreasing operations utilizing solvents that are denser than air.
- Welding and soldering operations utilizing less than 100 pounds of solder and 53 tons per year of electrodes.
- Torch cutting and welding of less than 200,000 tons of steel fabricated per year.
- Hazardous waste and hazardous materials drum staging areas.
- Surface coating and degreasing operations which do not exceed a combined total usage of more than 60 gallons/month of coatings, thinners, clean-up solvents, and degreasing solvents at any one emissions unit.
- Activities having the potential to emit no more than 5 TPY (actual) of any criteria pollutant. These activities includes (but are not limited to):
  - Roadways;
  - Storage piles;
  - Transfer points; and
  - Debarker

SECTION VII. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions) [Applicable]
Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference) [Applicable]
Subchapter 2 incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations as they existed on September 1, 2006 and in accordance with OAC 252:100 Appendix Q. NSPS and NESHAP will be addressed in the "Federal Regulations" section.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
Primary Standards are in Appendix E and Secondary Standards are in Appendix F of the Air Pollution Control Rules. At this time, all of Oklahoma is in attainment of these standards.

OAC 252:100-5 (Registration, Emissions Inventory and Annual Operating Fees) [Applicable]
Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants.

OAC 252:100-8 (Permits for Part 70 Sources) [Applicable]
Part 5 includes the general administrative requirements for Part 70 permits. Any planned changes in the operation of the facility which result in emissions not authorized in the permit and which exceed the "Insignificant Activities" or "Trivial Activities" thresholds require prior notification to AQD and may require a permit modification. Insignificant activities mean individual emission units that either are on the list in Appendix I (OAC 252:100) or whose actual calendar year emissions do not exceed the following limits:

- 5 TPY of any one criteria pollutant
- 2 TPY of any one hazardous air pollutant (HAP) or 5 TPY of multiple HAPs or 20% of any threshold less than 10 TPY for a HAP that the EPA may establish by rule

The applicant has fulfilled all applicable requirements relative to the construction permit application provisions. Subchapter 8-4(b)(5) requires facilities subject to requirements to submit a major source operating permit application within 180 days of commencement of operation. An application for Title V Permit Number 2003-099-TV is under review at DEQ. An update of the Title V permit will be submitted to DEQ within 180 days after this permit is issued.

OAC 252:100-9 (Excess Emission Reporting Requirements) [Applicable]
Except as provided in OAC 252:100-9-7(a)(1), the owner or operator of a source of excess emissions shall notify the Director as soon as possible but no later than 4:30 p.m. the following working day of the first occurrence of excess emissions in each excess emission event. No later than thirty (30) calendar days after the start of any excess emission event, the owner or operator of an air contaminant source from which excess emissions have occurred shall submit a report for each excess emission event describing the extent of the event and the actions taken by the owner or operator of the facility in response to this event. Request for affirmative defense, as described in OAC 252:100-9-8, shall be included in the excess emission event report. Additional

reporting may be required in the case of ongoing emission events and in the case of excess emissions reporting required by 40 CFR Parts 60, 61, or 63.

OAC 252:100-13 (Prohibition of Open Burning) [Applicable]
Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-17 (Incinerators) [Not Applicable]
The heat sources (EU-HS1 and EU-HS2) could potentially subject to the requirements of OAC 252-100-17, Part 11, Other Solid Waste Incineration Units (OSWI). However, EPA proposed "Identification of Non-Hazardous Secondary Materials That Are Solid Waste" on June 4, 2010 to determine which non-hazardous secondary materials that are used as fuels or ingredients in combustion units are solid wastes under the Resource Conservation and Recovery Act (RCRA). The meaning of ''solid waste'' as defined under RCRA is of particular importance since it will determine whether a combustion unit is required to meet emissions standards for solid waste incineration units issued under section 129 of the Clean Air Act (CAA) or emissions standards for commercial, industrial, and institutional boilers issued under CAA section 112. In this rule, EPA proposed that legitimate fuel or ingredient products that result from the processing of discarded non-hazardous secondary materials are not solid wastes. Therefore, the heat sources are not solid waste incineration unit and are not subject to this subchapter.

OAC 252:100-19 (Particulate Matter) [Applicable]
This subchapter limits emissions of particulate matter from processes other than fuel-burning equipment based on their process weight rate (Appendix G).
If the Process Rate Weight (P) is less than or equal to 30 tons/hour:

$$E_{\text{Allow lbs/hr}} = 4.10\ (P)^{0.67}$$

If the Process Weight Rate (P) is greater than 30 tons/hour:

$$E_{\text{Allow lbs./hr}} = 55\ (P)^{0.11} - 40$$

The allowable emissions, calculated in the following table for process units, are based on the above two formulas. No specific periodic monitoring, other than recordkeeping on the total process throughput is required to demonstrate compliance with this subchapter for the facility.

COMPLIANCE WITH SUBCHAPTER 19

Emission Point	Total Process Weight Rate Related To Emission Point TPH	Allowable PM Emissions Per Subchap. 19-12 lb/hr	Permitted Total PM_{10} Emissions, lb/hr
EP-RTO1 (RTO)	80.0	49.06	18.70
EP-BF1 (Biofilter)	57.4	45.87	13.40
EP-FF2 (Screening)	70.5	47.83	1.46
EP-FF3 (Forming)	70.5	47.83	2.68
EP-FF4 (Saws)	57.4	45.87	2.38
EP-FF5 (Sander)	51.7	44.89	2.57
EP-FF6 (Fuel)	70.5	47.83	0.43

The allowable emissions for the indirect fired combustion units (subject to OAC 252:100-19-4)

are determined by OAC 252:100, Appendix C. Emissions are computed based on estimated maximum particulate matter emissions.

Emission Point	Max Heat Rating MMBtu/Hr	Allowable PM Emissions Per Subchapter 19.4, lb/ MMBTU	Estimated PM Emissions, lb/MMBTU
EP-EG1 (Em Gen 1)	6.3	0.6	0.32 (diesel)
EP-EG2 (Em Gen 2)	6.3	0.6	0.32 (diesel)
EP-FP1 (Fire Pump 1)	1.47	0.6	0.33 (diesel)
EP-AMU1-18 (Air Make Up Units(18)	19.95	0.6	0.006

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]
No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. The facility will conduct observations one time each year for visible emissions from stacks and egress points to demonstrate compliance with this requirement.

OAC 252:100-29 (Fugitive Dust) [Applicable]
Subchapter 29 prohibits the handling, transportation, or disposition of any substance likely to become airborne or windborne without taking "reasonable precautions" to minimize emissions of fugitive dust. No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or to interfere with the maintenance of air quality standards. The facility will use best management practices to minimize particulate emissions from industrial activities and roads, in and around the plant site.

OAC 252:100-31 (Sulfur Compounds) [Applicable]
Part 5 limits sulfur dioxide emissions from new equipment (constructed after July 1, 1972). This subchapter specifies an SO_2 emission limitation of 1.2 lb/MMBTU for solid fuel, 0.80 lb/MMBTU for liquid fuel, and 0.20 lb/MMBTU for gaseous fuel. The two heat sources (EU-HS1 and EU-HS2) are rated 150 MMBTU/H each and burn residual wood waste. Only small amounts of kerosene are used to light the wood fuel on a cold start-up, the heat sources are not equipped to fire liquid or gaseous fuels. Therefore the 1.2 lb/MMBTU limit applies to these two sources. Based on continuous operation, maximum capacity of 300 MMBtu/hr, and the permitted emission rate of 14.1 lb/hr SO_2, each heat source emits 0.047 lb/MMBTU SO_2, therefore they are in compliance.

OAC 252:100-33 (Nitrogen Oxides) [Applicable]
Subchapter 33 sets the following NOx limits for new fuel-burning equipment with a rated heat input greater than or equal to 50 MMBTUH: 0.2 lb/MMBTU for gas-fired fuel-burning equipment, 0.3 lb/MMBTU for liquid-fired fuel-burning equipment, and 0.7 lb/MMBTU for solid fossil fuel-burning equipment. The two heat sources (EU-HS1 and EU-HS2) are rated 150

MMBTU/H each and burns residual wood waste, therefore, they are subject to this subchapter. Based on continuous operation, maximum capacity of 300 MMBtu/hr, and the permitted emission rate of 205.6 lb/hr NO_X, each heat source emits 0.68 lb MMBTU NOx, therefore, they are in compliance.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]
None of the following affected processes are part of this project: gray iron cupola, blast furnace, basic oxygen furnace, petroleum catalytic cracking unit or catalytic reforming unit.

OAC 252:100-37 (Volatile Organic Compounds) [Applicable]
Part 3 requires new (constructed after December 28, 1974) storage tanks with a capacity between 400 and 40,000 gallons holding an organic liquid with a true vapor pressure greater than 1.5 psia to be operated with a submerged fill pipe or with an organic vapor recovery system. Consistent with OAC 252:100-37-15(b), the permit will require storage tanks that are storing a VOC with vapor pressure greater than 1.5 psia and have a capacity greater than 400 gallons to be equipped with a permanent submerged fill pipe or a vapor recovery system as required in 252:100-37-15(a)(2).
Part 3 requires loading facilities with a throughput equal to or less than 40,000 gallons per day to be equipped with a system for submerged filling of tank trucks or trailers if the capacity of the vehicle is greater than 200 gallons. The facility does not have the physical equipment (loading arm and pump) to conduct this type of loading. Therefore, this requirement is not applicable.
Part 5 limits the VOC content of paints and coatings. Consistent with OAC 252-37-25, any coating line or coating operation with VOC emissions (that emits more than 100 pounds per 24 hour day) shall use coatings that comply with the following amounts listed below. (Limits are expressed in pounds VOC per gallon coating, excluding the volume of any water and exempt organic compounds).

1) Alkyd primer – 4.8
2) Vinyls – 6.0
3) NC lacquers – 6.4
4) Acrylics – 6.0
5) Epoxies – 4.8
6) Maintenance finishes – 4.8
7) Custom product finishes – 6.5

The branding operations involve application of ink marking to the product (OSB). The marking applied to the product cannot be classified as one of the seven VOC coating operations listed above, therefore, the VOC limits associated with this regulation are not applicable to the branding operations. The paint booths other than branding at the facility utilize water-based coatings that have minimal or no VOC contained in the coating.
Part 7 requires all effluent water separators, openings or floating roofs to be sealed or equipped with an organic vapor recovery system.
HEW does not operate an effluent water separator.

Part 7 also requires fuel-burning and refuse burning equipment to be operated and maintained to minimize emissions. Temperature and available air must be sufficient to provide essentially complete combustion. The fuel-burning equipment will be operated to minimize emissions of

VOC, consistent with OAC 252:100-37-36. The RTO will control VOC emissions from the Heat Sources and Dryers

OAC 252:100-42 (Toxic Air Contaminants (TAC)) [Not Applicable]
This subchapter regulates toxic air contaminants (TAC) that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained unless a modification is approved by the Director. Since no AOC has been designated anywhere in the state, there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]
This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

The following Oklahoma Air Pollution Control Rules are not applicable to this facility:

OAC 252:100-11	Alternative Emissions Reduction	not requested
OAC 252:100-15	Mobile Sources	not in source category
OAC 252:100-17	Incinerators	not type of emission unit
OAC 252:100-23	Cotton Gins	not type of emission unit
OAC 252:100-24	Grain Elevators	not in source category
OAC 252:100-39	Nonattainment Areas	not in area category
OAC 252:100-47	Municipal Solid Waste Landfills	not in source category

SECTION VIII. FEDERAL REGULATIONS

PSD, 40 CFR Part 52.21 [Applicable]
Total potential emissions of NO_X, CO, and VOC are greater than the PSD threshold of 250 TPY. Any future emission increases must be evaluated for PSD if they exceed a significance level (40 TPY NO_X, 100 TPY CO, and 40 TPY VOC).

NSPS, 40 CFR Part 60 [Subparts Db Applicable]

Subpart Db, Industrial-Commercial-Institutional Steam Generating Units. This subpart affects each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating units of greater than 100 MMBTUH. The two heat sources are subject to this subpart and shall comply with all applicable requirements.

§60.42b(d)(1) sets the SO_2 standard as 0.5 lb/MMBTU for affected facilities that have an annual capacity factor for coal and oil of 30 percent or less and are subject to a federally enforceable permit limiting the operation of the affected facility to an annual capacity factor for coal and oil of 30% or less. Percent reduction requirements are not applicable. The permit will limit the facility's annual capacity factor for oil to 30% or less, thus the facility will not be subject to the NOx standard.

§60.45b(j) and §60.47b(f) exempt facilities that combust very low sulfur oil from testing and monitoring requirements if the owner or operator obtains fuel receipts as described in §60.49b(r).

§60.49b(r) requires that the owner operator of an affected facility who elects to demonstrate that the affected facility combusts only very low sulfur oil under §60.42b(j)(2) shall obtain and maintain at the affected facility fuel receipts from the fuel supplier which certify that the oil meets the definition of distillate oil as defined in §60.41b. For the purposes of this section, the oil need not meet the fuel nitrogen content specification in the definition of distillate oil. Reports shall be submitted to the Administrator certifying that only very low sulfur oil meeting this definition was combusted in the affected facility during the preceding reporting period.

§60.43b(c)(1) sets the PM standard as 0.1 lb/MMBTU for affected facilities that combust wood, or wood with other fuels, except coal, and have an annual capacity factor greater than 30% for wood.

§60.43b(f) sets the opacity limit to 20% for an affected facility that combusts coal, oil, wood, or mixtures of these fuels with any other fuels.

§60.43b(g) provides that particulate matter and opacity limits apply at all times, except during periods of startup, shutdown or malfunction.

§60.44b(d) sets the NOx standard to 0.3 lb/MMBTU for an affected facility that simultaneously combusts natural gas with wood, municipal-type solid waste, or other solid fuel, except coal, unless the affected facility has an annual capacity factor for natural gas of 10 percent or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent or less for natural gas. The permit will limit the facility's annual capacity factor for natural gas to 10% or less, thus the facility will not be subject to the NOx standard.

§60.44b(l) does not apply as the permit will limit the facility's annual capacity factor for natural gas and oil to 10% or less per §60.44b(l)(1).

§60.48b(a) requires that the owner or operator of an affected facility subject to the opacity standard under §60.43b shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the opacity of emissions discharged to the atmosphere and record the output of the system.

Subpart Kb, Volatile Organic Liquids Storage Vessels. None of the vessels onsite store a material with a vapor pressure greater than 15.0 kPa. Therefore, this subpart does not apply.

Subpart IIII, Stationary Compression Ignition Internal Combustion Engines. This subpart applies to certain Compression Ignition (CI or Diesel) Engines constructed (ordered) or modified

after July 11, 2005. The three diesel engines at the facility were all constructed in 2003 and have not been modified. Therefore, they are not subject.

NESHAP, 40 CFR Part 61 [Not Applicable]
There will be no sources at the facility subject to any of the requirements of 40 CFR 61, National Emission Standards for HAPs (NESHAPs).

NESHAP, 40 CFR Part 63 [Subparts DDDD, QQQQ, ZZZZ, & DDDDD are Applicable]
Subpart DDDD, Plywood and Composite Wood Products (PCWP), was promulgated on July 30, 2004, with amendments promulgated on February 16, 2006. This rule applies to OSB manufacturing and associated operations. Compliance options based on production, add-on control, and emission-averaging are described in the MACT. The initial compliance date was October 1, 2007, and then postponed to October 1, 2008 (Federal Register, February 16, 2006). However, for facilities that obtained a final and legally effective case-by-case MACT determination prior to the promulgation date of such emission standard, §63.44(b)(1) stated that " the owner or operator shall comply with the promulgated standard as expeditiously as practicable, but not longer than 8 years after such standard is promulgated." In this case, Huber will comply with Subpart DDDD requirements as expeditiously as possible but in no case later than July 30, 2012 per §63.44(b)(1).
Subpart QQQQ, Surface Coating of Wood Building Products. This subpart applies to surface coating of wood building products, which means the application of coatings using, for example, roll coaters or curtain coaters in the finishing or laminating of any wood building product that contains more than 50 percent by weight wood or wood fiber excluding the weight of any glass components, and is used in the construction, either interior or exterior, of a residential, commercial, or institutional building. Compliance will be demonstrated in accordance with the requirements outlined for the compliant material category as described in Section 63.4691 (a).
Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE). This subpart affects any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions.

The following engines at major sources do not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of § 63.6645(f):

1) New or reconstructed emergency stationary RICE > 500-hp located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) [emergency demand response] and (iii) [deviation of voltage or frequency of ≥ 5%].
2) New or reconstructed limited use stationary RICE with a site rating of > 500-hp.

The two emergency engines are in this limited requirements category.

A summary of the requirements for the remaining RICE are shown below.

RICE Category	Emission Limit/Operating Limits
Existing, Emergency, Black Start, CI	Change oil and filter every 500 hours of operation or annually, whichever comes first;
	Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and
	Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

The fire pump engine is subject to these requirements.

All applicable requirements have been incorporated into the permit.

Subpart DDDDD, Industrial, Commercial and Institutional Boilers and Process Heaters. On January 31, 2013, the EPA took final action on its reconsideration of certain issues in the emission standards for the control of HAP from industrial, commercial, and institutional boilers and process heaters at major sources of HAP. The compliance dates for the rule are January 31, 2016, for existing sources and, January 31, 2013, or upon startup, whichever is later, for new sources.

A boiler or process heater is new or reconstructed if construction or reconstruction of the boiler or process heater commenced on or after June 4, 2010.
Unit(s) designed to burn gas 1 subcategory includes any boiler or process heater that burns only natural gas, refinery gas, and/or other gas 1 fuels.

Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity of $\leq$ 5 MMBTUH must complete a tune-up every 5 years as specified in § 63.7540. Units in the gas 1 subcategories will conduct these tune-ups as a work practice for all regulated emissions under Subpart DDDDD. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or 11 through 13 of Subpart DDDDD, or the operating limits in Table 4 of Subpart DDDDD.
Existing boilers and process heaters located at a major source facility, not including limited use units must have a one-time energy assessment performed by a qualified energy assessor.
A 1.5 MMBTU rail steam generator is used to produce steam to heat material in rail cars to assist in offloading activities.

All emissions from the other combustion units at HEW pass through the dryer before being emitted to the atmosphere. Combustion unit/dryer emissions are controlled by a regenerative thermal oxidizer. In the preamble to the Federal Register (Vol. 69, No. 146 / Friday, July 30, 2004) National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products, the EPA established that combustion gasses which routinely pass through the dryer are regulated by the PCWP MACT. Emissions subject to the PCWP are exempt from other requirements under this subpart.

The 1.5 MMBTU gas fired rail steam generator is applicable to this section.
The 18 gas fired air make up units are not process heaters and are not subject to this subpart.

Compliance Assurance Monitoring, 40 CFR Part 64 [Applicable]
Compliance Assurance Monitoring, as published in the Federal Register on October 22, 1997, applies to any pollutant specific emission unit at a major source, which is required to obtain a Title V permit, if it meets all the following criteria:

- It is subject to an emission limit or standard for an applicable regulated air pollutant.
- It uses a control device to achieve compliance with the applicable emission limit or standard.
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant of 100 TPY.

The sources and pollutants that meet these three conditions are as follows:
- Heat sources/Dryers – NO_x, VOC, CO, and PM
- Press – VOC
- Pneumatic conveying systems (five emission points) – PM

HAP is excluded because the major HAP sources must comply with MACT monitoring requirements.

CAM requirements will be addressed in the Title V Operating Permit.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Not Applicable]
The definition of a stationary source does not apply to transportation, including storage incident to transportation, of any regulated substance or any other extremely hazardous substance under the provisions of this part. This facility does not store any regulated substance above the applicable threshold limits. More information on this federal program is available on the web page: *www.epa.gov/ceppo*.

Stratospheric Ozone Protection, 40 CFR Part 82 [Subpart A and F Applicable]
These standards require phase out of Class I & II substances, reductions of emissions of Class I & II substances to the lowest achievable level in all use sectors, and banning use of nonessential products containing ozone-depleting substances (Subparts A & C); control servicing of motor vehicle air conditioners (Subpart B); require Federal agencies to adopt procurement regulations which meet phase out requirements and which maximize the substitution of safe alternatives to Class I and Class II substances (Subpart D); require warning labels on products made with or containing Class I or II substances (Subpart E); maximize the use of recycling and recovery upon disposal (Subpart F); require producers to identify substitutes for ozone-depleting compounds under the Significant New Alternatives Program (Subpart G); and reduce the emissions of halons (Subpart H).
Subpart A identifies ozone-depleting substances and divides them into two classes. This facility does not utilize any Class I & II substances.
Subpart F requires that any persons servicing, maintaining, or repairing appliances except for motor vehicle air conditioners; persons disposing of appliances, including motor vehicle air conditioners; refrigerant reclaimers, appliance owners, and manufacturers of appliances and

recycling and recovery equipment comply with the standards for recycling and emissions reduction.
The standard condition XX.C of the permit address the requirements specified at §82.156 for persons opening appliances for maintenance, service, repair, or disposal; §82.158 for equipment used during the maintenance, service, repair, or disposal of appliances; §82.161 for certification by an approved technician certification program of persons performing maintenance, service, repair, or disposal of appliances; §82.166 for recordkeeping; § 82.158 for leak repair requirements; and §82.166 for refrigerant purchase records for appliances normally containing 50 or more pounds of refrigerant.

SECTION IX. COMPLIANCE

Tier Classification and Public Review

This application has been determined to be a **Tier II** based on the request of CO_2e emission increase that is a relaxation to an existing PSD construction permit. The applicant has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the landowner has been notified. Information on all permit actions is available for review by the public in the Air Quality Section of DEQ Web Page: *http://www.deq.state.ok.us.*

The applicant published a "Notice of Tier II Permit Application Filing" in the *McCurtain Gazette*, a daily newspaper printed in the City of Idabel, McCurtain County on August 26, 2014. The notice stated that the application could be reviewed at the Idabel Public Library, 2 SE D Ave, Idabel OK, 74728 or at the Air Quality Division's main office. The applicant published a "Notice of Tier II Draft Permit" on August 25, 2015 in the same newspaper for a 30-day period public review. The draft permit was also available on the DEQ Web site *http://www.deq.state.ok.us/*. This facility is located within 50 miles of the border of Texas and Oklahoma and the state of Texas was given notice of the availability of the draft. No comments were received from the public or the State of Texas.

The draft permit was also sent to EPA for a concurrent review. Comments were received from the EPA Region VI and a response to those comments is provided below.

Response to Comments from EPA Region VI on the Proposed Permit

The following comments dated September 16, 2015, were received from Dinesh Senghani of EPA Region VI.

Comment 1. The draft permit sets a ton per year (tpy) Best Available Control Technology (BACT) limit for carbon dioxide equivalent (CO_2e) for Energy Source/Dryers and Regenerative Thermal Oxidizer (RTO) Burners, Press Biofilter and Natural Gas and Diesel Fuel Sources. The limit seems to be based on the potential to emit of the emission unit. We recommend that the BACT limit for CO_2e not be a tpy limit since the stringency of the BACT limit then depends on the amount the source is actually operated. Instead, we recommend an output based limit as noted in EPA's *PSD and Title V Permitting Guidance for Greenhouse Gases, March 2011, pages*

45-46, and Appendices F and H. For example, we recommend an output based limit in lb CO_2/ODT for the dryers and lb CO_2/MSF 3/8" for the press. The permit needs to set BACT limits with Output based BACT limits fully consider the efficiency of the unit and better reflect the good combustion practices and selected energy efficiency measures that are selected as BACT for the unit. In some cases, it may not be practical to set an output based limit. In those cases we would suggest input based limits such as pounds of CO_2e emissions per BTU of fuel fired. Of course, where technological or economic limitations on the application of a measurement methodology make it infeasible to impose an emissions standard, then a design, equipment, operational standard, or combination may be prescribed for the BACT limit. 40 C.F.R. 51.166(b)(12).

Response

For EUG 4, the press biofilter, the draft permit did not set a BACT emission limit for CO_2, because the primary function of the biofilter is to control VOC emissions, and the Mill operates the biofilter as efficiently as possible in order to minimize VOC emissions associated with the Press. Good operating practices to reduce Press VOC emissions inherently result in increased CO_2 emissions from the biofilter. Therefore, a BACT limit on CO_2 emissions would work against the primary purpose of the biofilter.

Huber has updated GHG BACT review to include output based CO_2e BACT limit in lb CO_2e/ODT for the Energy Source/ Dryer system and input based limits in lb CO_2e/MMBTU of fuel fired, and the permit has been updated accordingly. These limits are summarized in the following table.

Source	**Proposed GHG Output Based Limit**	**Proposed GHG Input Based Limit**
Energy System/Dryer	792.44 lb/ODT	
RTO		117.10 lb/MMBTU
Fire Pump Engine & Emergency Generators		163.61 lb/MMBTU
Railcar Steam Generator		117.10 lb/MMBTU
Air Makeup Units		117.10 lb/MMBTU

Comment 2. The specific condition D for EUG 3 – Energy System/Dryer Units (page 3 of the permit) states that, "the annual capacity factor for miscellaneous, non-hazardous housekeeping and process materials generated on-site shall not exceed 30% and the annual capacity factor of natural gas and oil as fuel shall not exceed 10%". We were not able to locate any specific recordkeeping requirements outlining how the capacity factors were to be monitored or determined. How does ODEQ ensure that this condition is not violated without any recordkeeping requirements? Please explain.

Response

The recordkeeping requirement has been added to Specific Condition 9.H that reads as the following:

H. The capacity factor for each fuel shall be calculated separately by dividing the actual calculated BTUs from fuel burned during a month by the maximum potential BTUs that could have been generated during the month at the maximum firing rate of the heat sources (300,000,000 BTUs per hour). The capacity factor shall then be calculated on a 12 month rolling average.

Comment 3. The specific condition A for EUG 3 – Energy System/Dryer Units (page 2 of the permit) states that, "Combined throughput of the two dryers shall not exceed 64.36 ODT/hr based on a 12 month rolling average (including operational downtime) calculated monthly (ODT means Oven Dried Ton), operating 8,760 hours per year when utilizing methylene diphenyl diisocyanate (MDI), and/or phenol formaldehyde (PF) and/or melamine urea phenol formaldehyde (MUPF) resins and/or other resins that will not cause allowable emissions to be exceeded, or that result in emissions of new regulated pollutants". We were not able to locate any specific recordkeeping requirements outlining how the capacity factors were to be monitored or determined. How does ODEQ ensure that this condition is not violated without any recordkeeping requirements? Please explain.

Response

Since specific condition A for EUG 3 has no reference to the capacity factors, we believe this comment is about the monitoring of the dryer throughput. Specific Condition 9.A clearly lists the recordkeeping requirements:

9. The permittee shall keep records as follows. Required records shall be retained on location for a period of at least five years following dates of recording and shall be made available to regulatory personnel upon request. [OAC 252:100-8-6(A)(3)]

   A. Dryer throughput expressed as ODT/hr (12 month rolling average calculated monthly) and ODT/yr (12 month rolling average calculated monthly).

In addition, applicant agreed to omit "including operational downtime" wording in Specific Condition A for EUG 3, and the revised condition will read as below:

A. Combined throughput of the two dryers shall not exceed 64.36 ODT/hr based on a 12 month rolling average calculated monthly ***using the average ODT/hr for each month*** (ODT means Oven Dried Ton), operating 8,760 hours per year when utilizing methylene diphenyl diisocyanate (MDI), and/or phenol formaldehyde (PF) and/or melamine urea phenol formaldehyde (MUPF) resins and/or other resins that will not cause allowable emissions to be exceeded, or that result in emissions of new regulated pollutants.

Fees Paid

Construction permit modification for a Part 70 source permit application fee of $5,000.

SECTION X. SUMMARY

The applicant has demonstrated the ability to achieve compliance with all applicable Air Quality Rules and Regulations. Ambient air quality standards are not threatened at this site. There is no other active Air Quality compliance or enforcement issues other than those noted above. Issuance of the construction permit is recommended.

PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS

Huber Engineered Woods, LLC **Permit No. 2003-099-C (M-6) PSD**
Broken Bow OSB Mill

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality Division on August 25, 2014. The Evaluation Memorandum dated February 12, 2016, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Commencing construction or operations under this permit constitutes acceptance of, and consent to, the conditions contained herein.

1. Points of emissions and emission limitations for each point: [OAC 252:100-8-6(a)]

EUG 2 – MISC COMBUSTION UNITS

EU-SG1 and EU-AMU1-18 are considered insignificant because each emits less than 5 TPY of criteria pollutants.

Emission Unit	Point	EU Name/Model	Size	Construction Date
EU-SG1	EP-SG1	Gas Fired Rail Steam Generator	1.5 MMBTUH	2003
EU-AMU1 – 18	EP-AMU1 - 18	Air Make Up Units (18)	19.95 MMBTUH In Total	2003

EP-AMU1 - 18 are equipped with hour meters.

The equipment items listed below are subject to NESHAP Subpart ZZZZ.

Emission Unit	Point	EU Name/Model	Size	Construction Date
EU-EG1	EP-EG1	Emergency Generator #1	900-hp	2003
EU-EG2	EP-EG2	Emergency Generator #2	900-hp	2003
EU-FP1	EP-FP1	Fire Pump Engine	210 hp	2003

EU-EG1, EU-EG2, and EU-FP1 are equipped with hour meters.

		NO_X		CO		Total PM_{10}		VOC		SO_2	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
210-hp Fire Pump Engine	EP-FP1	6.50	0.80	1.40	0.20	0.50	0.06	0.50	0.06	0.40	0.05
900-hp Emergency Generator #1	EP-EG1	27.90	3.30	6.00	0.70	2.00	0.20	2.20	0.30	1.80	0.20
900-hp Emergency Generator #2	EP-EG2	27.90	3.30	6.00	0.70	2.00	0.20	2.20	0.30	1.80	0.20

Emission Unit	Point	CO_2e TPY	CO_2e lb/MMBTU
210-hp Fire Pump Engine	EP-FP1	6,932.60	163.61
900-hp Emergency Generator #1	EP-EG1		163.61
900-hp Emergency Generator #2	EP-EG2		163.61
EU-SG1	EP-SG1		117.10
EU-AMU1 - 20	EP-AMU1 - 20		117.10

EUG 3 – ENERGY SYSTEM/DRYER UNITS

		NO_X		CO		Total PM_{10}		VOC as Emitted		SO_2	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Heat Source No. 1	EP-RTO1	205.6	900.53	92.80	406.46	18.7	82.0	61.60	269.81	14.1	61.6
Heat Source No. 2											

Emission Unit	Point	NOx	CO	VOC	PM_{10}	SO_2
		lb/ODT				
Heat Source No. 1	EP-RTO1	2.57	1.16	0.77	0.23	0.18
Heat Source No. 2						

Emission Unit	Point	CO_2e TPY	CO_2e lb/ODT	CO_2e lb/MMBTU
Heat Source No. 1	EP-RTO1	277,671.47	792.44	
Heat Source No. 2				
RTO		43082.95		117.10

A. Combined throughput of the two dryers shall not exceed 64.36 ODT/hr based on a 12 month rolling average calculated monthly using the average ODT/hr for each month (ODT means Oven Dried Ton), operating 8,760 hours per year when utilizing methylene diphenyl diisocyanate (MDI), and/or phenol formaldehyde (PF) and/or melamine urea phenol formaldehyde (MUPF) resins and/or other resins that will not cause allowable emissions to be exceeded, or that result in emissions of new regulated pollutants.

B. The two heat sources shall be fueled with the following :
The majority of fuel consists of bark and wood residuals, including sander dust and waste resinated board from the process some of which will have a paper overlay. Huber also burns miscellaneous, non-hazardous housekeeping and process materials generated on-site including paper, plastic, cardboard, used motor oil, used hydraulic oil, miscellaneous oils/grease, centrifuge dust, stamp ink, stencil paint, grinding fluid, WESP recycle water/sludge, resin, release agent, wax, edge seal, and a small amount of very low sulfur diesel fuel to ignite the furnace fire during startup.

C. All air exhausts from the heat sources/dryers shall be processed by a wet electrostatic precipitator (WESP) controlling PM_{10} and a regenerative thermal oxidizer (RTO)

controlling 95% VOC under normal operating conditions, or other equivalent air pollution control devices.

D. The annual capacity factor for miscellaneous, non-hazardous housekeeping and process materials generated on-site shall not exceed 30% and the annual capacity factor of natural gas and oil as fuel shall not exceed 10%.

EUG 4 - PRESS

		NO_X		CO		Total PM_{10}		VOC as emitted		SO_x	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Press No. 1 (post control)	EP-BF1	2.20	9.60	2.60	11.60	13.40	58.7	46.6	204.3	1.1	4.8

		CO_2
Emission Unit	**Point**	**TPY**
Press No. 1	EP-BF1	991.37

A. Throughput of the press shall not exceed 110 MSF/hr 3/8" basis (based on a 12 month rolling average calculated monthly), operating 8,760 hours per year.

B. The press and board cooler shall be operated in accordance with 40 CFR 63.2292 definition of wood products enclosure. A wood products enclosure means a permanently installed containment that was designed to meet the following physical design criteria:

(1) Any natural draft opening shall be at least four equivalent opening diameters from each HAP-emitting point, except for where board enters and exits the enclosure, unless otherwise specified by the EPA Administrator.

(2) The total area of all natural draft openings shall not exceed 5 percent of the surface area of the enclosure's four walls, floor, and ceiling.

(3) The average facial velocity of air through all natural draft openings shall be at least 3,600 meters per hour (200 feet per minute). The direction of airflow through all natural draft openings shall be into the enclosure.

(4) All access doors and windows whose areas are not included in item 2 of this definition and are not included in the calculation of facial velocity in item 3 of this definition shall be closed.

(5) The enclosure is designed and maintained to capture all emissions for discharge through a control device.

(6) If a man door or bay door will remain open for longer than necessary for personnel egress/ingress, a portable air flow monitor will be used once per shift to monitor and document that a minimum of 200 feet per minute velocity into the press room is being maintained until the door is closed.

C. When the board cooler is operating, all air exhausts from the board cooler room shall be routed to the press building.

D. The direct press exhaust pickup points shall be processed by a wet electrostatic precipitator (WESP) and a biofilter; the air exhausts collected by the press hoods and

the general room air exhausts shall be processed by the biofilter; and the air exhaust from the pre-heater shall be processed by a scrubber and the biofilter, providing a maximum VOC emission rate of 0.42 pounds per $MSF_{3/8}$ for VOC as emitted.

EUG 5 – BAGHOUSE SYSTEMS

		Total PM_{10}		Total VOC as emitted	
Emission Unit	**Point**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
Screening – System 9120	EP-FF2	1.46	6.40	25.30	110.90
Forming – System 9130	EP-FF3	2.68	11.73	17.40	76.20
Saws – System 9140	EP-FF4	2.38	10.43	29.20	127.70
Sander – System 9150	EP-FF5	2.57	11.24	9.70	42.40
Fuel – System 9195	EP-FF6	0.43	1.87	0.90	3.90

A. Each operation shall be equipped with a fabric filter that controls PM_{10} emission to the allowable emission rate, or other equivalent air pollution control devices.

B. PM_{10} emissions from this group are based on 0.005 gr/dscf grain loading derived from stack tests at the OSB Mill and applicable flow rates and operating hours of 8,760 hrs/yr.

EUG 6 - TANKS

The equipment items listed below are considered insignificant because each emits less than 5 TPY. Nominal throughputs are not limits.

Emission Unit	Point	EU Name/Model	Capacity/ Nominal Throughputs	Const. Date
EU-GAS1TK	EP-GAS1TK	Gasoline Storage Tank No. 1	550-gal/ 20,000 gal/yr	2003
EU-EG1TK	EP-EG1TK	Emergency Gen. No. 1 Diesel Tank	1,000-gal/ 13,850 gal/yr	2003
EU-EG2TK	EP-EG2TK	Emergency Gen. No. 2 Diesel Tank	1,000-gal/ 13,850 gal/yr	2003
EU-FP1TK	EP-FP1TK	Fire Pump Engine No. 1 Diesel Tank	500-gal/ 6,920 gal/yr	2003
EU-ME1TK	EP-ME1TK	Mobile Equipment Diesel Tank No. 1	1,000-gal 40,000 gal/yr	2003
EU-UR1TK	EP-UR1TK	Urea Storage Tank No. 1	10,000 gal/ 127,962 gal/yr	2003
EU-WAX2TK	EP-WAX2TK	Wax Storage Tank No. 2	25,000-gal each 41,000,000 lb/yr total	2003
EU-WAX3TK	EP-WAX3TK	Wax Storage Tank No. 3		2003
EU-RES2TK	EU-RES2TK	Resin Storage Tank No.2	25,000-gal each 50,000,000 lb/yr total	2003
EU-RES4TK	EU-RES4TK	Resin Storage Tank No.4		2003
EU-RES6TK	EU-RES6TK	Resin Storage Tank No.6		2003
	EU-WAX1TK	Wax or Resin Storage Tank No. 1	25,000-gal each 51,100,000 lb/yr	2003
	EP-RES1TK	Resin Storage Tank No. 1		2003
	EP-RES3TK	Resin Storage Tank No. 3		2003
	EP-RES5TK	Resin Storage Tank No. 5		2003
	EP-RA2TK	Release Agent or Resin Storage Tank		2003

EU-RA1TK	EP-RA1TK	Release Agent Storage Tank No. 1	25,000-gal each 3,200,000 lb/yr	2003
EU-CAU1TK	EP-CAU1TK	Caustic Storage Tank No. 1	10,000-gal/ 800,000 lb/yr	2003
EU-RAMIX1TK	EP-RAMIX1TK	Release Agent Mix Tank No. 1	1,000-gal/ 3,200,000 lb/yr	2003
EU-RAR1TK	EP-RAR1TK	Release Agent Recycle Tank 1	500-gal/ 3,200,000 lb/yr	2003

EUG 7 – BRANDING & COATING OPERATIONS

Branding and Coating Operations		**VOC**	
	Point	**lb/hr**	**TPY**
Branding	BRAND	1.8	7.5
Coatings Operations	Coatings Fugitive	-	7.48

A. The VOC content of coatings as applied, less water and exempt solvents, shall not exceed the following limits:

Coating	**lbs/gallon**
Alkyd Primers	4.8
Epoxies	4.8
Maintenance Finishes	4.8
Vinyls	6.0
Acrylics	6.0
NC lacquers	6.4
Custom Product Finishes	6.5

B. The VOC content of branding ink shall not exceed 7.6% or 0.563 lb/gal.
C. Paint spraying equipment shall be cleaned with solvents being drained into a closed container.
D. The permittee shall maintain paint spray guns in good working order so as to minimize paint overspray during operations.
E. Paint spray booths shall be equipped with filters for control of overspray. Spray booths and filter systems shall be maintained per manufacturers' recommendations.
F. The following records shall be maintained on-site. All such records shall be made available to regulatory personnel upon request. These records shall be maintained for a period of at least five years after the time they are made. Such records may include but are not limited to the following:
    a. Usage of coatings, solvents, and inks by type and volume (monthly and 12-month rolling total).
    b. Material Safety Data Sheets (MSDS) or other documentation from the manufacturer including technical data sheets, product data sheets, or similar correspondence which documents the VOC content and HAP content of each coating used.

c. Inspection and maintenance of all air pollution control devices (weekly).
d. Amount of collected cleaning solvent or wastes for disposal (monthly and 12-month rolling total).
e. Total emissions of all VOCs and HAPs (monthly and 12-month rolling total).

EUG 8 – FUGITIVE BUILDING EMISSIONS

Area	Flow	VOC		Methanol		Formaldehyde		PM_{10}	
	cf/minute	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Warehouse	240,000	3.10	13.56	0.21	0.90	0.09	0.37	0.05	0.24
Blending	180,000	4.69	20.55	1.99	8.73	0.11	0.50	0.09	0.38
Forming	90,000	4.15	18.18	2.13	9.32	0.10	0.46	0.06	0.27
Screening	60,000	2.72	11.89	--	--	--	--	0.05	0.21
Green End	10,300	2.74	12.00	--	--	--	--	0.01	0.04

EUG 9 – MAINTENANCE EMISSIONS FROM THE DRYER ABORT STACKS (INCLUDE HEAT SOURCE EMISSIONS)

		NO_X		CO		Total PM_{10}		VOC		SO_x	
Emission Unit	Point	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Dryer Abort Stacks	EUG-9	204	20.4	180	18	183	18.3	504	50.4	14	1.4

A. These stacks are limited to operate 200 hours a year each or any combination of durations not to exceed the allowable annual and hourly emission rates up to a total of 400 hours.
B. Permittee shall stop feeding process material to the dryers immediately when these stacks are open.
C. Permitee shall maintain records of the durations each abort stack is open while the heat sources and dryers are operating.

EUG 10 – RADIANT BARRIER APPLICATION OPERATION

Source	Controlled VOC Emissions	
	lb/hr	TPY
Radiant Barrier Operation	2. 7	9.5

A. The VOC content of coatings as applied, less water and exempt solvents, shall not exceed the following limits:

Coating	lbs/gallon
Alkyd Primers	4.8
Epoxies	4.8
Maintenance Finishes	4.8
Vinyls	6.0
Acrylics	6.0
NC lacquers	6.4
Custom Product Finishes	6.6

B. Glue spraying equipment shall be cleaned with solvents being drained into a closed container.

C. The permittee shall maintain glue spray nozzles in good working order so as to minimize glue overspray during operations.

D. The following records shall be maintained on-site. All such records shall be made available to regulatory personnel upon request. These records shall be maintained for a period of at least five years after the time they are made. Such records may include but are not limited to the following:

a. Usage of glue by type and volume (monthly and 12-month rolling total).

b. Material Safety Data Sheets (MSDS) or other documentation from the manufacturer including technical data sheets, product data sheets, or similar correspondence which documents the VOC content and HAP content of glue used.

c. Total emissions of all VOCs and HAPs (monthly and 12-month rolling total).

2. Upon issuance of an operating permit, the facility shall be authorized to operate as follows based on 12-month rolling totals:

EU-FP1, EU-EG1, and EU-EG2:	240 hrs/yr each
EU-AMU1-18:	5,040 hrs/yr each
EUG-9	400 hrs/yr each
The rest of the facility:	8,760 hrs/yr

3. The two heat sources are subject to NSPS Subpart Db and shall comply with applicable requirements including but not limited to the following: [40 CFR Part 60.40b-49b]

A. Emissions Standards:

a. PM: 0.1 lb/MMBTU [40 CFR Part 60.43b(c)(1)]

b. Opacity: 20% (6-minute average), except for one 6-minute period per hour of not more than 27% opacity. [40 CFR Part 60.43b(f)]

B. Test Requirements:

a. Compliance with PM standard shall be determined through performance testing as described in 60.46b(d).

C. Emission Monitoring

a. 60.48b(a) requires that the owner or operator of an affected facility subject to the opacity standard under 60.43b shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the opacity of emissions discharged to the atmosphere and record the output of the system.

D. 60.49b: Reporting and Recordkeeping requirements

4. The facility is subject to NESHAP Subpart DDDD and shall comply with applicable requirements including but not limited to the following as expeditiously as possible but in no case later than July 30, 2012 per §63.44(b)(1): [40 CFR Part 63.2230 to 63.2292]

§63.2230	What is the purpose of this subpart?
§63.2231	Does this subpart apply to me?
§63.2232	What parts of my plant does this subpart cover?
§63.2233	When do I have to comply with this subpart?
§63.2240	What are the compliance options and operating requirements and how must I meet them?
§63.2241	What are the work practice requirements and how must I meet them?
§63.2250	What are the general requirements?
§63.2251	What are the requirements for the routine control device maintenance exemption?
§63.2252	What are the requirements for process units that have no control or work practice requirements?
§63.2260	How do I demonstrate initial compliance with the compliance options, operating requirements, and work practice requirements?
§63.2261	By what date must I conduct performance tests or other initial compliance demonstrations?
§63.2262	How do I conduct performance tests and establish operating requirements?
§63.2263	Initial compliance demonstration for a dry rotary dryer.
§63.2264	Initial compliance demonstration for a hardwood veneer dryer.
§63.2265	Initial compliance demonstration for a softwood veneer dryer.
§63.2266	Initial compliance demonstration for a veneer redryer.
§63.2267	Initial compliance demonstration for a reconstituted wood product press or board cooler.
§63.2268	Initial compliance demonstration for a wet control device.
§63.2269	What are my monitoring installation, operation, and maintenance requirements?
§63.2270	How do I monitor and collect data to demonstrate continuous compliance?
§63.2271	How do I demonstrate continuous compliance with the compliance options, operating requirements, and work practice requirements?
§63.2280	What notifications must I submit and when?
§63.2281	What reports must I submit and when?
§63.2282	What records must I keep?
§63.2283	In what form and how long must I keep my records?
§63.2290	What parts of the General Provisions apply to me?
§63.2291	Who implements and enforces this subpart?

§63.2292 What definitions apply to this subpart?

5. Emergency engines (EG1, EG2, and FP1) are subject to NESHAP Subpart ZZZZ and shall comply with all applicable requirements. [40 CFR §§ 63.6580-6675]

What This Subpart Covers
§ 63.6580 What is the purpose of subpart ZZZZ?
§ 63.6585 Am I subject to this subpart?
§ 63.6590 What parts of my plant does this subpart cover?
§ 63.6595 When do I have to comply with this subpart?
Emission and Operating Limitations
§ 63.6603 What emission limitations and operating limitations must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?
§ 63.6603 What emission limitations and operating limitations must I meet if I own or operate an existing stationary CI RICE located at an area source of HAP emissions?
General Compliance Requirements
§ 63.6605 What are my general requirements for complying with this subpart?
Testing and Initial Compliance Requirements
§ 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?
§ 63.6615 When must I conduct subsequent performance tests?
§ 63.6620 What performance tests and other procedures must I use?
§63.6625 What are my monitoring, installation, operation, and maintenance requirements?
§ 63.6630 How do I demonstrate initial compliance with the emission limitations and operating limitations?
Continuous Compliance Requirements
§ 63.6635 How do I monitor and collect data to demonstrate continuous compliance?
§ 63.6640 How do I demonstrate continuous compliance with the emission limitations and operating limitations?
Notifications, Reports, and Records
§ 63.6645 What notifications must I submit and when?
§ 63.6650 What reports must I submit and when?
§ 63.6655 What records must I keep?
§ 63.6660 In what form and how long must I keep my records?
Other Requirements and Information
§ 63.6665 What parts of the General Provisions apply to me?
§ 63.6670 Who implements and enforces this subpart?
§ 63.6675 What definitions apply to this subpart?

6. EUG-10 is subject to NESHAP Subpart QQQQ and shall comply with all applicable requirements.

WHAT THIS SUBPART COVERS

§63.4680 What is the purpose of this subpart?
§63.4681 Am I subject to this subpart?
§63.4682 What parts of my plant does this subpart cover?
§63.4683 When do I have to comply with this subpart?

EMISSION LIMITATIONS

§63.4690 What emission limits must I meet?
§63.4691 What are my options for meeting the emission limits?
§63.4692 What operating limits must I meet?
§63.4693 What work practice standards must I meet?
§63.4700 What are my general requirements for complying with this subpart?
§63.4701 What parts of the General Provisions apply to me?
§63.4710 What notifications must I submit?
§63.4720 What reports must I submit?
§63.4730 What records must I keep?
§63.4731 In what form and for how long must I keep my records?

COMPLIANCE REQUIREMENTS FOR THE COMPLIANT MATERIAL OPTION

§63.4740 By what date must I conduct the initial compliance demonstration?
§63.4741 How do I demonstrate initial compliance with the emission limitations?
§63.4742 How do I demonstrate continuous compliance with the emission limitations?

COMPLIANCE REQUIREMENTS FOR THE EMISSION RATE WITHOUT ADD-ON CONTROLS OPTION

§63.4750 By what date must I conduct the initial compliance demonstration?
§63.4751 How do I demonstrate initial compliance with the emission limitations?
§63.4752 How do I demonstrate continuous compliance with the emission limitations?

COMPLIANCE REQUIREMENTS FOR THE EMISSION RATE WITH ADD-ON CONTROLS OPTION

§63.4760 By what date must I conduct performance tests and other initial compliance demonstrations?
§63.4761 How do I demonstrate initial compliance?
§63.4762 [Reserved]
§63.4763 How do I demonstrate continuous compliance with the emission limitations?
§63.4764 What are the general requirements for performance tests?
§63.4765 How do I determine the emission capture system efficiency?
§63.4766 How do I determine the add-on control device emission destruction or removal efficiency?
§63.4767 How do I establish the emission capture system and add-on control device operating limits during the performance test?
§63.4768 What are the requirements for continuous parameter monitoring system installation, operation, and maintenance?

7. Compliance with emission limitations by EUG 3 and EUG 4 shall be demonstrated by performance tests by the permittee using the following test methods specified in 40 CFR 60 within 180 days of issuance of Permit No. 2003-99-C (M-3)(PSD). The permittee shall furnish a written report to Air Quality. Performance testing shall be conducted while the unit is operated within 10% of the rate at which operating permit authorization is sought, unless the permittee can sufficiently demonstrate, at the time of testing, that the facility cannot operate at 90% capacity rate, then a least of 80% capacity rate will be accepted. The following USEPA methods shall be used for testing of emissions, unless otherwise approved by Air Quality:

OAC 252:100-8-6(a)]

Method 1: Sample and Velocity Traverses for Stationary Sources.
Method 2: Determination of Stack Gas Velocity and Volumetric Flow Rate.
Method 3: Gas Analysis for Carbon Dioxide, Excess Air, and Dry Molecular Weight.
Method 4: Determination of Moisture in Stack Gases.
Method 5: Determination of Particulate Emissions From Stationary Sources.
Method 7 or 7E: Determination of Nitrogen Oxide Emissions From Stationary Sources
Method 10: Determination of Carbon Monoxide Emissions From Stationary Sources
Method 18 or 25A: Determination of Volatile Organic Compounds Emissions From Stationary Sources.
Method 201/201A: Determination of PM_{10} Emissions
Method 202: Determination of condensable particulate emissions
Method 320: Measurement of Vapor Phase Organic and Inorganic Emission by Extractive FTIR, for specified compounds.
Or as an alternative to Method 320, NCASI Method CI/WP-98.01, Chilled Impinger Method for Use at Wood Products Mills to Measure Formaldehyde, Methanol, and Phenol.

MACT testing and emission calculation for MACT purposes shall be based on the MACT specific methods.

VOC as emitted shall be calculated as follows:

- Subtract the methane determined by Method 18 from the THC as propane determined by Method 18 or Method 25A.
- Subtract predetermined responses of formaldehyde, phenol, and methanol from the THC as propane less methane. The remaining VOCs are assumed to be alpha and beta pinene which fully respond on the THC monitor. The VOC mass emission rate is then calculated using the molecular weight of pinene.
- Determine the concentrations and rates of methanol, formaldehyde, and phenol using the Method 320 measured concentrations.
- Sum the pinenes, methanol, formaldehyde, and phenol rates and the resulting total is VOC as emitted rate.

8. As part of the operating permit application, the permittee shall include a copy of the format in which required records will be kept and shall specify operating parameters

which indicate proper functioning of each air pollution control device. These parameters shall include, but not be limited to, the following: [OAC 252:100-43]

-Pressure drop across fabric filters (FF2 – FF7)
-Secondary transformer/rectifier voltage of the WESPs for dryers
-RTO firebox temperature
-Fuel flow rate for all fuels that are fed to the heat sources
-Biofilter bed temperature for each of the six media cells

9. The permittee shall keep records as follows. Required records shall be retained on location for a period of at least five years following dates of recording and shall be made available to regulatory personnel upon request. [OAC 252:100-8-6(A)(3)]

   A. Dryer throughput expressed as ODT/hr (12 month rolling average calculated monthly) and ODT/yr (12 month rolling average calculated monthly). CO_2e emissions expressed as lbs/ODT (12 month rolling average calculated monthly).
   B. Press throughput expressed as MSF/hr 3/8" basis (12 month rolling average calculated monthly) and MMSF/yr 3/8" basis (12 month rolling average calculated monthly). VOC and CO_2e emissions expressed as lbs/$MSF_{3/8"}$ (12 month rolling average including operational downtime calculated monthly).
   C. Records required for branding and coating operations as specified in Specific Condition NO. 1.
   D. Pressure drop across fabric filters (daily) for EUG5 sources maintained at least 0.2"wc for 12-hr average.
   E. Secondary transformer/rectifier voltage at least 30 kilovolts of the WESPs on the dryer exhaust gas stream (24-hour average).
   F. RTO firebox temperature on the dryer exhaust gas stream (3-hour block average).
   G. Fuel feed rate (lb/hr) for all fuels that are fed to the heat sources (monthly).
   H. The capacity factor for each fuel shall be calculated separately by dividing the actual calculated BTUs from fuel burned during a month by the maximum potential BTUs that could have been generated during the month at the maximum firing rate of the heat sources (300,000,000 BTUs per hour). The capacity factor shall then be calculated on a 12 month rolling average.
   I. Operating hours for sources permitted for less than 8,760 hours per year, as specified in S.C. #2 (EU-FP1, EU-EG1, EU-EG2, and EU-AMU1-18).
   J. Biofilter temperature (24-hr block average).
   K. Records required by NSPS Subpart Db.
   L. Records required by NESHAP Subpart DDDD.
   M. Records required by NESHAP Subpart QQQQ.
   N. Records required by NESHAP Subpart ZZZZ.

10. The permittee shall amend the Title V operating permit application within 180 days of the issuance of this permit.

11. The following records shall be maintained on-site to verify insignificant activities.
[OAC 252:100-43]

A. Fuel dispensing to vehicles: throughput (monthly and 12-month rolling totals, for gasoline and for diesel)
B. Vapor pressures of materials stored and capacities of all storage tanks with less than or equal to 10,000 gallons capacity that store volatile organic liquids with a true vapor pressure less than or equal to 1.0 psia at maximum storage temperature.

12. The permittee shall be authorized to use MUPF resin or other resins that will not cause emission increases or result in emissions of new regulated pollutant. The following records shall be maintained on-site. All such records shall be made available to regulatory personnel upon request. These records shall be maintained for a period of at least five years after the time they are made. Such records may include but are not limited to the following:
    a. Usage of resins and catalyst by type and volume (monthly and 12-month rolling total).
    b. Material Safety Data Sheets (MSDS) or other documentation from the manufacturer including technical data sheets, product data sheets, or similar correspondence which documents the VOC content and HAP content of each coating used.

13. Per Table 7 to Part 63 NESHAP, Subpart DDDD, process unit equipped with a biofilter shall conduct a repeat performance test using the applicable method(s) specified in Table 4 to this subpart within 2 years following the previous performance test and within 180 days after each replacement of any portion of the biofilter bed media with a different type of media or each replacement of more than 50 percent (by volume) of the biofilter bed media with the same type of media.

14. The Permit Shield (Standard Conditions, Section VI) is extended to the following requirements that have been determined to be inapplicable to this facility.
[OAC 252:100-8-6(d)(2)]

A.	OAC 252:100-11	Alternative Emissions Reduction
B.	OAC 252:100-15	Mobile Sources
C.	OAC 252:100-23	Cotton Gins
D.	OAC 252:100-24	Grain Elevators
E.	OAC 252:100-39	Non-attainment Areas
F.	OAC 252:100-47	Landfills
G.	40 CFR Part 61	NESHAP
H.	40 CFR Part 60	NSPS Subpart Kb.
I.	40 CFR Parts 72, 73, 74, 75 & 76	Acid Rain

J.M. Huber Corporation
Huber Engineered Woods Division
Attn: Mr. Mike Kenna
1000 J.T. Tucker Road
Broken Bow, OK 74728

SUBJECT: Construction Permit No. 2003-099-C (M-6) PSD
Huber Engineered Woods, Broken Bow
Broken Bow, McCurtain County, Oklahoma
Permit Writer: Jian Yue

Dear Mr. Kenna:

Air Quality Division has completed the initial review of your permit application referenced above. This application has been determined to be a **Tier II**. In accordance with 27A O.S. § 2-14-301 & 302 and OAC 252:4-7-13(c) the application and enclosed draft permit are now ready for public review. The requirements for public review include the following steps which you must accomplish:

1. Publish at least one legal notice (one day) of "Notice of Tier II Draft Permit" in at least one newspaper of general circulation within the county where the facility is located. (Instructions enclosed)
2. Provide for public review (for a period of 30 days following the date of the newspaper announcement) a copy of this draft permit and a copy of the application at a convenient location (preferably a public location) within the county of the facility.
3. Send to AQD a copy of the proof of publication notice from Item #1 above together with any additional comments or requested changes which you may have on the draft permit.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me at (405) 702-4100 or the permit writer, Jian Yue, at (405) 702-4205.

Sincerely,

Phillip Fielder, P.E., Permits and Engineering Group Manager
AIR QUALITY DIVISION
Enclosures

Texas Commission on Environmental Quality
Operating Permits Division (MC 163)
P.O. Box 13087
Austin, TX 78711-3087

SUBJECT: Construction Permit No. 2003-099-C (M-6) (PSD)
Huber Engineered Woods, Broken Bow
Broken Bow, McCurtain County, Oklahoma
Permit Writer: Jian Yue

Dear Sir / Madame:

The subject facility has requested a construction permit. Air Quality Division has completed the initial review of the application and prepared a draft permit for public review. Since this facility is within 50 miles of the Oklahoma - Texas border, a copy of the proposed permit will be provided to you upon request. Information on all permit and a copy of this draft permit are available for review by the public in the Air Quality Section of DEQ Web Page: *http://www.deq.state.ok.us.*

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me or the permit writer at (405) 702-4100.

Sincerely,

Phillip Fielder, P.E., Permits and Engineering Group Manager
AIR QUALITY DIVISION

Arkansas Dept. of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

SUBJECT: Construction Permit No. 2003-099-C (M-6) (PSD)
Huber Engineered Woods, Broken Bow
Broken Bow, McCurtain County, Oklahoma
Permit Writer: Jian Yue

Dear Sir / Madame:

The subject facility has requested a construction permit. Air Quality Division has completed the initial review of the application and prepared a draft permit for public review. Since this facility is within 50 miles of the Oklahoma - Arkansas border, a copy of the proposed permit will be provided to you upon request. Information on all permit and a copy of this draft permit are available for review by the public in the Air Quality Section of DEQ Web Page: *http://www.deq.state.ok.us.*

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me or the permit writer at (405) 702-4100.

Sincerely,

Phillip Fielder, P.E., Permits and Engineering Group Manager
AIR QUALITY DIVISION

J.M. Huber Corporation
Huber Engineered Woods Division
Attn: Mr. Mike Kenna
1000 J.T. Tucker Road
Broken Bow, OK 74728

SUBJECT: Construction Permit No. 2003-099-C (M-6) PSD
Huber Engineered Woods, Broken Bow
Broken Bow, McCurtain County, Oklahoma
Permit Writer: Jian Yue

Dear Mr. Kenna:

Enclosed is the permit authorizing modification of the referenced facility. Please note that this permit is issued subject to the certain standards and specific conditions, which are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emissions inventory for this facility. An emissions inventory must be completed on approved AQD forms and submitted (hardcopy or electronically) by April 1st of every year. Any questions concerning the form or submittal process should be referred to the Emissions Inventory Staff at 405-702-4100.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact the permit writer at (405) 702-4100.

Sincerely,

Jian Yue, P.E.
Engineering Section
AIR QUALITY DIVISION

PERMIT

AIR QUALITY DIVISION
STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
707 NORTH ROBINSON, SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

Permit No. 2003-99-C (M-6) PSD

Huber Engineered Woods, LLC

having complied with the requirements of the law, is hereby granted permission to make modifications as listed in the memorandum and specifications at the Broken Bow Facility at Broken Bow, McCurtain County, Oklahoma, Subject to standard conditions dated July 21, 2009 and specific conditions, both attached.

In the absence of construction commencement, this permit shall expire 18 months from the issuance date, except as authorized under Section VIII of the Standard Conditions.

Division Director **Date**

Air Quality Division