

**AIR PERMIT REVIEW**

<b>APPLICANT:</b> Weyerhaeuser Company- Elkin Plant	<b>SITE LOCATION:</b> Elkin	<b>COUNTY:</b> Surry	
<b>TECHNICAL CONTACT:</b> Billie Caudill	<b>PHONE:</b> (336) 835-5100	<b>RESPONSIBLE OFFICIAL:</b> Tommy E. Glisson	<b>TITLE:</b> General Manager
<b>REVIEW ENGINEER:</b> Mark Cuilla	<b>SIGNATURE:</b>	<b>DATE:</b> XXXXXX, 2003	
<b>REGIONAL CONTACT:</b> Ray Stewart	<b>REGIONAL OFFICE:</b> WSRO	<b>SIC CODE:</b> 2493	
<b>APPLICATION NUMBER:</b> 8600108.03A	<b>EXISTING PERMIT NUMBER:</b> 05678R24	<b>NEW PERMIT NUMBER:</b> 05678R25	

**I. Purpose of Application**

The 1990 amendments to section 112 of the CAA included a new section, 112(j). Section 112(j) states that the provisions of 112(j) apply if the EPA misses a deadline for promulgation of a standard under 112(d). On January 9, 2003, EPA proposed the MACT standards for Plywood and Composite Wood Products (Subpart DDDD). This proposal date was beyond the MACT hammer date in 112(j); therefore, facilities subject to the MACT are required to submit a permit application within 18 months after the missed deadline. EPA allowed this submittal to take two parts: Part I was due May 2002 and required facilities to supply facility information and MACT applicability information. Part II requires facilities to supply a complete application in which MACT standards are determined on a case-by-case basis.

This submittal for Weyerhaeuser Company – Elkin Plant satisfies the case-by-case maximum achievable control technology (MACT) requirements in subsection 112(j) and 15A NCAC 2D .1109. The application is based on an assessment of public health risk consistent with subsections 112(d)(4) and 112(f)(2). The use of risk assessment to evaluate MACT is discussed in Section IV(G) of the preamble to the proposed PCWP MACT and in the white paper published by the American Forest and Paper Association.

Based on the results of the risk assessment presented in the application, the facility is requesting the following:

1. that the risk assessment be accepted by DAQ in support of a determination that the requested emissions limitations provide an equivalent level of protection for public health as the level of protection that standards promulgated pursuant to subsection 112(d) of the Clean Air Act are required to achieve under the requirements of subsection 112(f) of the Clean Air Act;
2. that the permit be modified and re-issued pursuant to Title V with a federally enforceable permit condition that documents the case-by-case determination of compliance with Section 112 of the Clean Air Act. Furthermore, if the EPA promulgates the standard under Section 112(d) after the date this permit is issued that would be applicable to the facility, in lieu of the emission limitation established by this case-by-case MACT risk assessment, the facility requests that the plant be granted eight years to comply as allowed by section 112(j)(6);
3. that compliance with the proposed case-by-case MACT be based on the following production assumptions underlying the risk assessment:

- a. maximum production shall not exceed 450 million square feet per year; and
- b. the wet cell burners shall not operate for more than 3,000 hours per year each in the idle-run mode.

These surrogate parameters will ensure that the potential emission rates used in the risk assessment will not be exceeded at the facility.

- 4. that if DAQ does not concur that the risk assessment demonstrates the section 112 criteria have been met then the specific reasons for rejection be provided in writing in accordance with section 505 of the clean air act.

The case-by-case risk assessment that is presented in this MACT Hammer Part 2 permit application demonstrates that the current level of potential HAP emissions at the facility does not justify the extreme economic and occupational health ramifications that would required if the proposed rule is promulgated. Weyerhaeuser comments that on the contrary, the assessment indicates that the level of risk at the maximum receptor in the ambient air surrounding the facility meets the criteria set by Congress for deleting source categories from the list of MACT affected sources.

**II. Facility Description**

Weyerhaeuser Company operates an oriented strand board (OSB) manufacturing facility. The facility is classified as a major source of hazardous air pollutants and is included within the category of sources to be regulated under 40 CFR 63 for Plywood and Composite Wood Products (PCWP).

**III. History/Background/Application Chronology**

**May 14, 2002** – 112(j) Part I application received by DAQ.

**July 30, 2003** – 112(j) Part II application received by DAQ.

**IV. Permit Modification/Changes**

The following table describes the modifications to the current permit.

Page(s)	Section	Description of Change(s)
Cover	-	-amended permit revision number and all dates
All	Header	-amended permit revision number
4	A.1	-added reference to 2D .1109 Case-by-Case MACT
14	A.20	-added permit condition for 2D .1109

**V. Regulatory Review**

This proposed modification does not affect any of the current regulatory requirements. However, it does add new operational limits for the facility and wet cell burners in support of the potential emission calculations used in the case-by-case risk assessment. 15A NCAC 2D .1109, 112(j) Case-by-case Maximum Achievable Control Technology, has been added to the permit as demonstrated and outlined in the permit application.

**VI. NSPS, NESHAPS, PSD, Attainment Status, 112(r), CAM**

**NSPS**

The facility currently operates under multiple NSPS emission limitations for its existing storage tank (Subpart Kb) and Wellons wet fuel cell and auxillary No. 2 fuel oil-fired burners (Subpart Dc). This proposed permit modification does not affect these requirements.

**NESHAP/MACT**

On January 9, 2003, the EPA proposed MACT standards for Plywood and Composite Wood Products (PCWP) (40 CFR 63, Subpart DDDD). Under the proposed rule, existing dryer and press operations would be required to reduce HAP emissions by 90% (defined as the sum of the emissions of the following six compounds: acetaldehyde, acrolein, formaldehyde, methanol, phenol, and propionaldehyde). This proposed modification addresses these requirements with a case-by-case MACT determination in which a health based risk assessment is used.

The facility comments that budgetary estimates indicate that the cost of meeting the proposed MACT emission limitations are on the order of \$10 million. Additionally, the proposed requirement to enclose the press will require press operators to enter into a confined space to free up stuck boards and will greatly increase their occupational exposure and risk of injury.

**PSD**

The facility currently operates under multiple PSD conditions. The first condition establishes best available control technology (BACT) limits for the following operations: (wood dryer, idle run on the wet cells, wood dust collection, sander dust collection, board press vent, fire water engine, and yard hog engine). The second condition limits sulfur dioxide emissions from the fuel combustion equipment to less than 40 tons per consecutive twelve-month period. This proposed permit modification does not affect these requirements.

**112(r)**

This facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in the Rule.

**CAM**

As of this permit modification, the facility is operating under a State construction and operation permit; therefore, a CAM analysis is not required at this time.

**VII. Facility Wide Air Toxics**

The facility is subject to the following state-enforceable only toxic emission rates pursuant to 15A NCAC 2D .1100 in accordance with approved demonstration:

<b>Emission Units</b>	<b>Pollutants</b>	<b>Limits</b>
1.a. Wet ESP (5115) on dryers 1611, 1621, & 1631	acetaldehyde	1.63E+04 lb/hr
	acrolein	5.43E+01 lb/hr
	arsenic	1.81E+01 lb/yr
	benzene	1.49E+04 lb/yr
	benzo(a)pyrene	4.48E+03 lb/yr
	beryllium	4.10E+02 lb/yr
	cadmium	2.42E+02 lb/yr
	chlorine	6.18E+02 lb/hr

Emission Units	Pollutants	Limits
	chlorine	3.94E+03 lb/day
	chromium VI	7.65E+00 lb/yr
	formaldehyde	2.85E+01 lb/hr
	n-hexane	3.23E+04 lb/day
	hexane isomers	6.56E+04 lb/hr
	hydrogen chloride	1.18E+02 lb/hr
	manganese	5.36E+02 lb/day
	mercury, vapor	2.00E+01 lb/day
	mercury, alkyl	1.77E+00 lb/day
	methylene chloride	1.16E+03 lb/hr
	methylene chloride	1.02E+07 lb/yr
	methyl ethyl ketone	1.58E+04 lb/hr
	methyl ethyl ketone	3.80E+05 lb/day
	nickel	1.05E+02 lb/day
	phenol	1.01E-01 lb/hr
	styrene	6.98E+03 lb/hr
	sulfuric acid mist	1.03E+01 lb/hr
	sulfuric acid mist	2.48E+02 lb/day
	toluene	2.00E+04 lb/hr
	toluene	4.80E+05 lb/day
	xylene	1.15E+04 lb/hr
	xylene	2.77E+05 lb/day
1.b.i. Multi-clone exhaust stack (ID No. 3340 on the Wellons wet fuel cells and No. 2 fuel oil auxiliary burners of dryers (ID Nos. 1611 &1631)	Acetaldehyde	1.34E+01 lb/hr
	acrolein	2.19E+00 lb/hr
	arsenic	7.9E+00 lb/yr
	benzene	2.87E+03 lb/yr
	benzo(a)pyrene	1.27E+03 lb/yr
	beryllium	1.54E+02 lb /yr
	cadmium	8.65E+01 lb/yr
	chlorine	7.32E+01 lb/hr
	chlorine	5.56E+02 lb/day
	chromium VI	3.33E+00 lb/yr
	formaldehyde	6.50-01 lb/hr
	n-hexane	7.85E+03 lb/day
	hydrogen chloride	3.35E+01 lb/hr
	manganese	2.21E+02 lb/day
	mercury, vapor	4.86E+00 lb/day
	mercury, alkyl	5.03E-01 lb/day
	methylene chloride	1.38E+02 lb/hr
	nickel	4.59E+01 lb/day
	phenol	7.07E-03 lb/hr
	styrene	8.07E-04 lb/hr
	sulfuric acid mist	3.88E+00 lb/hr
	sulfuric acid mist	9.30E+01 lb/day
	toluene	1.27E-02 lb/hr
	xylene	8.70E-03 lb/hr
1.b.ii. Multi-clone exhaust stack (ID No. 3350 on the Wellons wet fuel cell and No. 2 fuel oil auxiliary burner of dryer (ID Nos. 1621)	Acetaldehyde	6.72E+00 lb/hr
	acrolein	1.09E+00 lb/hr
	arsenic	3.95E+00 lb/yr
	benzene	1.43E+03 lb/yr
	benzo(a)pyrene	6.36E+02 lb/yr
	beryllium	6.82E+01 lb/yr
	cadmium	3.84+01 lb/yr
	chlorine	3.66E+01 lb/hr

Emission Units	Pollutants	Limits
	chlorine	2.78E+02 lb/day
	chromium VI	1.66E+00 lb/yr
	formaldehyde	3.20E-01 lb/hr
	n-hexane	3.49E+03 lb/day
	hexane isomers	7.12E+03 lb/hr
	hydrogen chloride	1.67E+01 lb/hr
	manganese	1.11E+02 lb/day
	mercury, alkyl	2.51E-01 lb/day
	mercury, vapor	2.16E+00 lb/day
	methylene chloride	6.91E+01 lb/hr
	nickel	2.29E+01 lb/day
	phenol	3.53E-03 lb/hr
	styrene	4.32E-04 lb/hr
	sulfuric acid mist	1.72E+00 lb/hr
	sulfuric acid mist	4.13E+01 lb/day
	toluene	5.64E-03 lb/hr
	Xylene	3.86E-03 lb/hr
7. Eight board press vents (ID No. 4309)	Acetaldehyde	5.40E+02 lb/hr
	acrolein	8.80E-01 lb/hr
	formaldehyde	1.11E+01 lb/hr
	phenol	7.63E+01 lb/hr
8. Fire water engine (290 HP, ID No. 5000)	acetaldehyde	4.52E-02 lb/hr
	acrolein	1.22E-04 lb/hr
	arsenic	2.33E-01 lb/yr
	benzene	2.48E+02 lb/yr
	benzo(a)pyrene	1.19E+00 lb/yr
	beryllium	1.05E+00 lb/yr
	cadmium	1.95E+01 lb/yr
	chromium VI	5.75E-02 lb/yr
	formaldehyde	4.04E-04 lb/hr
	n-hexane	3.55E+02 lb/day
	hexane isomers	7.24E+02 lb/hr
	manganese	1.49E+01 lb/day
	mercury, vapor	2.42E-02 lb/day
	nickel	2.23E+00 lb/day
	sulfuric acid mist	1.75E-01 lb/hr
	sulfuric acid mist	4.20E+00 lb/day
	toluene	2.71E+00 lb/hr
	toluene	6.51E+01 lb/day
	xylene	1.79E+00 lb/hr
	xylene	4.30E+01 lb/day
9. Wood yard hog engine (750 HP, ID No. 1100)	acetaldehyde	1.11E-01 lb/hr
	acrolein	2.99E-04 lb/hr
	arsenic	6.02E-01 lb/yr
	benzene	6.08E+02 lb/yr
	benzo(a)pyrene	3.09E+00 lb/yr
	beryllium	2.57E+00 lb/yr
	cadmium	5.05E+01 lb/yr
	chromium VI	1.48E-01 lb/yr
	formaldehyde	9.92E-04 lb/hr
	n-hexane	9.15E+02 lb/day
	hexane isomers	1.87E+03 lb/hr
	manganese	3.85E+01 lb/day
	mercury, vapor	5.94E-02 lb/day

<b>Emission Units</b>	<b>Pollutants</b>	<b>Limits</b>
	nickel	5.76E+00 lb/day
	sulfuric acid mist	4.54E-01 lb/hr
	sulfuric acid mist	1.09E+01 lb/day
	toluene	6.64E+00 lb/hr
	toluene	1.59E+02 lb/day
	xylene	4.36E+00 lb/hr
	xylene	1.05E+02 lb/day
10. Standby generator (760 HP, ID No. 4763)	acetaldehyde	1.08E-01 lb/hr
	acrolein	2.91E-04 lb/hr
	arsenic	6.10E-01 lb/yr
	benzene	5.93E+02 lb/yr
	benzo(a)pyrene	3.14E+00 lb/yr
	beryllium	2.50E+00 lb/yr
	cadmium	5.12E+01 lb/yr
	chromium VI	1.51E-01 lb/yr
	formaldehyde	9.68E-04 lb/hr
	n-hexane	9.28E+02 lb/day
	hexane isomers	1.89E+03 lb/hr
	manganese	3.90E+01 lb/day
	mercury, vapor	5.76E-02 lb/day
	nickel	5.83E+00 lb/day
	sulfuric acid mist	4.58E-01 lb/hr
	sulfuric acid mist	1.10E+01 lb/day
	toluene	6.44E+00 lb/hr
	toluene	1.55E+02 lb/day
	xylene	4.28E+00 lb/hr
	xylene	1.03E+02 lb/day
11. Eight board press vents (ID No. 4309, idle mode operation)	acrolein	5.61E+00 lb/hr
	formaldehyde	1.25E+01 lb/hr

As part of the application, the facility provided an air quality dispersion modeling analysis for both short term impacts and long term impacts. The short term modeling analysis evaluated the ambient impacts of three groups of sources. Each of the three groups represent maximum operating characteristics of all equipment with one of each operating scenarios for the dryers. The maximum value for the appropriate averaging period for the group with the highest predicted ambient concentration was compare to the respective AAL for each compound. Modeled concentrations were below the AALs for each compound included in the short term modeling (all toxics listed in the proposed MACT as described above).

The portion of the risk assessment to evaluate long term impacts was performed according to federal guidelines, the assumptions were refined in order to make a reasonable comparison with the Congressional thresholds under Subsection 112(c)(9)(B) of the Clean Air Act that were utilized in conjunction with Subsection 112(f)(2) to evaluate the margin of safety afforded by the proposed limitations under 112(j). The analysis followed the methodology utilized by EPA in their “rough” risk assessment of these same nine compounds for the PWCP MACT.

Per Jamie Sellman, DAQ AQAB, “the modeling analysis adequately demonstrates compliance with the appropriate AALs for the seven NC toxics on a source-by-source basis.” The modeling analysis indicated that the maximum short-term impacts ranged from 0%(acetaldehyde, manganese, and methylene chloride) to 64% (formaldehyde) of the appropriate AALs. This compliance demonstration assumes the pollutant emission rate calculations provided are correct.

The long-term risk assessment modeling included only one group of sources, using the limit restrictions that are in the current permit (05678R24). The modeling concatenated five-years of meteorological data to calculate the five year average concentration for the pollutants. Mrs. Sellman states that “ the modeling methodologies used for the long-term risk assessment are consistent with NC air quality guidelines for the pollutants listed....but should be reviewed at the federal level to determine consistency and applicability to EPA risk assessment modeling guidelines and dose-response values.”

**VIII. Statement of Compliance**

Based on the latest inspection of July 9, 2003, by Ray Stewart of the Winston-Salem Regional Office, the facility was found to be in compliance with all applicable air quality regulations.

**IX. Stipulation Review**

The Winston-Salem Regional Office did not request a review of the current permit conditions. It should be noted that the initial title V draft permit has been taken to public notice. All permit conditions and stipulations will be updated with the issuance of that permit. The modifications in this application will be consolidated upon completion of both permitting activities.

**X. Public Notice / EPA and Affected State Review**

Pursuant to 2Q .0521, a notice of the draft Title V Permit shall be placed in a newspaper of general circulation in the area where the facility is located. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 2Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also pursuant to 2Q .0522, a notice of the draft Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 2Q .0521 above. There are no affected States for this facility.

**XI. Conclusions, Comments, and Recommendations**

Permit 05678R24 is proposed to be modified as requested by the Permittee to include a case-by-case MACT determination with associated operational limits on maximum production and hours of operation of the wet cells while in idle-run mode. These limitations adequately demonstrate exclusion from the proposed MACT standard, and with EPA concurrence on the long-term risk assessment DAQ concurs with the modification of the permit.

Upon completion of the 30-day public comment period, EPA will be given their required 45-day period in which to review all relevant documentation (including the permit application itself) in order to approve of the federally enforceable case-by-case determination as proposed in the DRAFT permit.