



## COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY  
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L. Preston Bryant, Jr.  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4000  
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May 22, 2006

Ms. Kathleen S. Kilpatrick  
Director, Virginia Department of Historic Resources  
2801 Kensington Avenue  
Richmond, VA 23221

Re: Columbia Forest Products - Chatham, VA

Dear Ms. Kilpatrick:

I understand that the Department of Historic Resources is concerned that certain proposed changes at the Columbia Forest Products (CFP) plywood manufacturing facility in Chatham will adversely impact the historic resources of that community. These changes at CFP are currently the subject of DEQ review under state permitting regulations for air pollution control. Information received or developed in this permit process may be of value when considering impacts on historic resources. Attached is a comparison table providing information on the physical scope of the project and the expected impact on air emissions.

In general, the project involves replacement of the facility's single existing boiler with a larger boiler, and the addition of a steam-driven electrical generator. The existing boiler is rated at 7 million Btu per hour, and the replacement unit is rated at 12.6 million Btu per hour. While this replacement boiler is larger, it is still less than 50% of the threshold that would trigger federal performance standards for new units of this type and is still considered a relatively small unit. To provide some frame of reference, the capacity of the boilers at the Chatham High School have a total heat input of approximately 8.5 million Btu per hour, while a unit similar to the Columbia Forest Products boiler recently installed at Longwood University has rating of 29.0 million Btu per hour. In contrast, the Georgia-Pacific plywood mill in Emporia has a boiler rated at 179.4 million Btu per hour and a single unit at Chesterfield Power Station is rated at over 6 billion Btu per hour. Thus, while changing from a unit rated at 7 million Btu to one rated at 12.7 million Btu is a large percentage increase, it does not change the general characterization as a small unit and is not expected to alter the general physical appearance of the facility.

DEQ does anticipate that the installation of the replacement unit will reduce the incidences of excessive smoke that have been observed from the current boiler and have been the subject of complaints from the community. Such incidents are caused by upsets in the combustion process. The proposed boiler incorporates a different fuel feed design which will reduce the potential for combustion upset, and the use of the proposed steam-driven generation should provide for a more stable steam demand that results in a more stable combustion process.

The new boiler will be located on the same plant property as the existing manufacturing site and I am told that there will be a new building to house the boiler and a new fuel storage silo. In addition, the current draft permit would establish the minimum stack height for the new boiler at an elevation that is approximately 30 feet higher than the current stack. As you will note from the attachment, the calculated air pollution rate does increase due to the project. This is because of the anticipated use of additional fuel to supply steam to the generator. However, the predicted impact of the emissions (the ground level concentration), based on computer modeling, is *reduced* due to greater dispersion provided by the increase in stack height. While this stack height is not as tall as suggested in public comments received on the draft permit, compliance with air quality standards is predicted and the increased height should not alter the visual impact of the facility within the community. To provide some perspective of the effect of the stack height change, attached are copies of pictures provided by residents as part of their comments to the draft DEQ permit and an aerial photograph of the plant vicinity obtained from DEQ's geographic information system. The aerial photograph shows the plant in proximity to the railroad tracks, the Mitchell residence and the downtown Chatham area. The first photograph shows the plant as viewed from the railroad tracks and gives the location of the current stack (approximately 40 feet tall) along with the approximate location of the proposed stack. The second photograph shows a view from the tracks looking back towards the residences with notation that the trees are approximately 100 feet above the base of the stack. Therefore, it appears that the proposed elevation of the new stack is below the treeline and will be obscured to the same approximate extent as the current stack.

The DEQ permit engineer assigned to this action is Allen Armistead. If you would like additional background information from our files, or for further explanation of the information provided here, please contact me or Allen at (434)582-6202.

Sincerely,

  
David K. Paylor

DKP:dln

Enclosure



CFP\_Comparison.xls

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**From:** Paylor,David [mailto:dkpaylor@deq.virginia.gov]  
**Sent:** Wednesday, May 10, 2006 3:56 PM  
**To:** Kathleen Kilpatrick  
**Subject:** FW: Columbia Forest Products - Comparison

Kathleen, here's the high level technical analysis. I've made some inquiries to EPA to understand our responsibilities and I'd say it's still pretty unclear. We're going to need to have some more discussions after I've gotten some research done. This is a State Operating Permit which is clearly (to me) not a delegated program from EPA since it's a state permit (with no reference in federal regulation) that facilities receive to limit production to levels that do not trigger the need for a federal permit. I really don't want to say that we have no H responsibilities but would like to say that based on a general analysis of the issues there appears to be no problem and that we've met all legal requirements. Let's talk when you get a minute. David

-----Original Message-----

**From:** Sydnor,James  
**Sent:** Wednesday, May 10, 2006 1:49 PM  
**To:** Paylor,David; Weeks,Richard  
**Cc:** Thompson,Tamera  
**Subject:** FW: Columbia Forest Products - Comparison

Attached is a comparison sheet that Allen Armistead put together about the before and after situation at CFP. There will be a small increase in emissions but the air quality impact will be less as a result of the taller stack. Our best understanding is that the low speed wood grinder may produce less noise than the wood hog. The wood grinder is limited to 5800 tons per year based on its maximum capacity not as a result of a permit limit. This permit and the emissions estimates are based on 8760 hours per year of operations.

In summary, emissions will increase somewhat, the air quality impacts will be about 50% less, production is not expected to increase, and noise may be less with the new grinder.

James E. Sydnor

Va. Dept. of Env. Quality

Acting Director, Air Division

804-698-4424

-----Original Message-----

**From:** Thompson,Tamera  
**Sent:** Wednesday, May 10, 2006 9:22 AM  
**To:** Sydnor,James  
**Subject:** FW: Columbia Forest Products - Comparison

FYI

-----Original Message-----

**From:** Armistead, Allen

**Sent:** Wednesday, May 10, 2006 9:21 AM

**To:** Thompson, Tamera

**Cc:** Henderson, Thomas

**Subject:** Columbia Forest Products - Comparison

Attached is a side by side comparison for the ongoing permit action of the current equipment and the proposed equipment for the facility. Let me know if any additional information needs to be added or if further clarification is needed.

<<CFP\_Comparison.xls>>

*Allen Armistead*

*Environmental Specialist II*

434-582-6202

VA Department of Environmental Quality

South Central Regional Office

7705 Timberlake Road

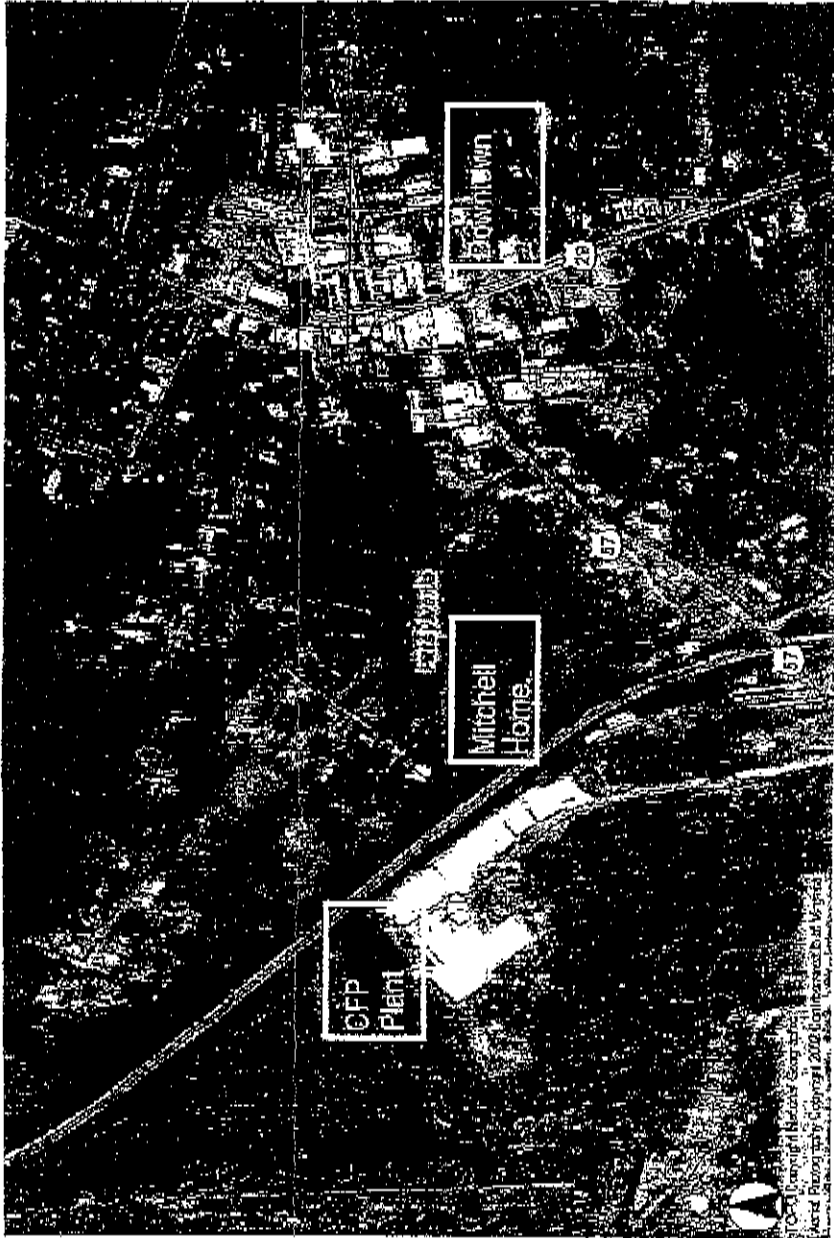
Lynchburg, VA 24502

Main #: 434-582-5120

FAX: 434-582-5125 or 5181

## Columbia Forest Products - Comparison of Current vs. Proposed

Equipment	Current (to be removed)	Proposed (to be installed)
	7 MMBtu/hr Wood-fired Boiler w/ multicyclone Particulate control and 40 foot stack	12.6 MMBtu/hr Wood-fired Boiler w/ multicyclone Particulate control and 65 foot stack
	Wood Hog w/ electric drive & baghouse Particulate control	Low Speed Wood Grinder w/ electric drive & baghouse Particulate control
		Steam turbine generator
<b>Boiler Calculated Emissions</b>		
	Calculated Maximum Emissions	Calculated Maximum Emissions
Particulate Matter (PM)	2.6 lbs/hr 11.2 tons/yr	3.8 lbs/hr 16.6 tons/yr
PM-10 (PM<10 $\mu$ )	2.3 lbs/hr 10.1 tons/yr	3.8 lbs/hr 16.6 tons/yr
SOx	0.2 lbs/hr 0.8 tons/yr	0.3 lbs/hr 1.4 tons/yr
NOx	3.4 lbs/hr 15.0 tons/yr	6.2 lbs/hr 27.0 tons/yr
CO	4.2 lbs/hr 18.4 tons/yr	7.6 lbs/hr 33.1 tons/yr
VOC	0.1 lbs/hr 0.5 tons/yr	0.2 lbs/hr 0.9 tons/yr
Acrolein	0.03 lbs/hr 0.12 tons/yr	0.05 lbs/hr 0.22 tons/yr
Formaldehyde	0.11 lbs/hr 0.46 tons/yr	0.19 lbs/hr 0.83 tons/yr
<b>Boiler Modeling</b>		
Max. Model Conc. @ emission rate of 1 lb/hr	58 $\mu\text{g}/\text{m}^3$	18.9 $\mu\text{g}/\text{m}^3$
<b>Impact - based on emissions &amp; model conc.</b>		
PM	148.19 $\mu\text{g}/\text{m}^3$	71.44 $\mu\text{g}/\text{m}^3$
PM-10	134.08 $\mu\text{g}/\text{m}^3$	71.44 $\mu\text{g}/\text{m}^3$
SOx	10.15 $\mu\text{g}/\text{m}^3$	5.95 $\mu\text{g}/\text{m}^3$
NOx	198.94 $\mu\text{g}/\text{m}^3$	116.69 $\mu\text{g}/\text{m}^3$
CO	243.60 $\mu\text{g}/\text{m}^3$	142.88 $\mu\text{g}/\text{m}^3$
VOC	6.90 $\mu\text{g}/\text{m}^3$	4.05 $\mu\text{g}/\text{m}^3$
Acrolein	1.62 $\mu\text{g}/\text{m}^3$	0.95 $\mu\text{g}/\text{m}^3$
Formaldehyde	6.09 $\mu\text{g}/\text{m}^3$	3.57 $\mu\text{g}/\text{m}^3$
<b>Hog/Grinder Calculated Emissions</b>		
wood scrap throughput	5800 tons/yr	5800 tons/yr
PM	0.18 tons/yr	0.18 tons/yr
PM-10	0.01 tons/yr	0.01 tons/yr





Present stack.

Approximate position  
of proposed stack.

← trees  
~100 feet  
above  
stack base.



Looking east from factory. Residues are immediately beyond the trees.