

**Agency of Natural Resources  
Department of Environmental Conservation**

**Air Pollution Control Division  
Building 3, South  
802-241-3841**

**MEMORANDUM**

To: Fibermark, Inc., Brattleboro, Vermont  
A2 File

From: Beth Eliason, Environmental Engineer

Date: July 25, 2007

Subject: Technical Support Document for Operating Permit Renewal and Amendment  
#AOP-07-008

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FiberMark North America, Inc. (hereinafter "FiberMark") owns and operates a paperboard manufacturing facility at 161 Wellington Road in Brattleboro, Vermont (also referred to herein as "Facility"). The Facility is listed under the Standard Industrial Classification ("SIC") Code 2631 - Paperboard Mills. The regulated sources of air contaminant emissions at the Facility are the paper making processes, two (2) No. 6 fuel oil-fired Bigelow boilers rated at 38 million British Thermal Units per hour ("MMBTU/hr") each of heat input, and a temporary No. 2 fuel oil-fired supplemental boiler rated at less than 15 MMBTU/hr of heat input.

The Permittee submitted an application for renewal of their existing Title V Permit to Operate issued on January 13, 2005, and requesting approval to utilize used straight vegetable oil (SVO), either blended with No. 6 fuel oil or straight, as an alternate fuel in the Facility's Bigelow boilers. The Permittee has proposed a maximum daily limit of 13,870 gallons per day of vegetable oil in the two Bigelow boilers firing No. 6 fuel.

A complete technical support document was prepared and issued with the Facility's Title V Permit to Construct and Operate issued on January 13, 2005. With the exception of the added use of SVO the Permittee has not proposed any changes to Facility operations that require additional technical review. The use of SVO in the Facility's two Bigelow boilers is not expected to cause an increase in emissions from the Facility. Emission testing conducted while burning 100% SVO during a short trial on March 21, 2007 indicated that emissions of sulfur dioxides ("SO<sub>2</sub>") and nitrogen oxides ("NO<sub>x</sub>") decrease with the change from 100% No. 6 fuel oil to No. 6 SVO. The table below summarizes the results of the March 21, 2007 trial.

Average Emission Rate from Bigelow Boilers, in parts per million						
Emission Test Date: March 21, 2007						
Testing Performed by: Tighe and Bond Consulting Engineers						
Method of Analysis: Testo 350 XL Portable Emission Analyzer						
Parameter Measured	Burning No. 6 Fuel Oil		Burning 100% SVO		Percent Change	
	Boiler #1	Boiler #2	Boiler #1	Boiler #2	Boiler #1	Boiler #2
CO	0.6	0.3	0.0	5.2	Not calculated	
NO <sub>x</sub>	384	379	167	85	-57%	-77%
SO <sub>2</sub>	480	600	18	13	-96%	-98%

An updated technical review was not prepared concurrent with issuance of the renewed Permit to Construct and Operate #AOP-07-008, given that emissions of SO<sub>2</sub> and NO<sub>x</sub> decreased during the trial. The permit does require Fibermark to perform more thorough emission compliance testing to demonstrate compliance with the permitted emission rates, which were not changed as part of the current permit amendment.

The renewed Permit to Construct and Operate #AOP-07-008 requires Fibermark to calculate and report emissions from the combustion of straight vegetable oil (SVO) using EPA AP-42 Emission Factors for Stationary Point and Area Sources (5<sup>th</sup> edition) for uncontrolled No. 6 fuel oil combustion in commercial/institutional/residential combustors, Table 1.3-1. These factors are considered conservative for estimating emissions from the combustion of SVO. This assumption will be verified by the emission testing requirements contained in the Permit.

Please refer to the January 13, 2005 technical support document for a complete description of Facility processes and review of Facility emissions.