VERMONT AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation
Air Pollution Control Division

# TECHNICAL SUPPORT DOCUMENT

# FOR

# PERMIT TO CONSTRUCT AND OPERATE

# # AOP-06-040

Date Permit Issued: February 6, 2008

## Churchill Coatings Corporation
## North Springfield, Vermont

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*This Technical Support Document details the Agency of Natural Resources, Department of Environmental Conservation, Air Pollution Control Division review for the Air Pollution Control Permit to Construct and is intended to provide additional technical information, discussion and clarification in support of the Permit. It is not intended to provide a comprehensive review of the Facility or permit process or duplicate the information contained in the Permit.*

| **Facility:** | **Facility / Applicant – Contact Person:** |
|---|---|
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## 1.0 INTRODUCTION

Churchill Coatings Corporation (hereinafter "Permittee" and also referred to herein as "Owner/Operator") owns and operates a clapboard painting facility (also referred to herein as "Facility") at the Precision Drive industrial park in North Springfield, Vermont. The Facility operates two coating units to prime and paint clapboards, trim boards and various other lumber products. .

The allowable emissions for the Facility are summarized in Table 1-1 below:

**Table 1-1: Allowable Air Contaminant Emissions (tons/year) [1]**

| $PM/PM_{10}$ | $SO_2$ | NOx | CO | VOC | Total HAPs [2] |
|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | < 100 | < 10/25 |

[1] PM/PM10 - particulate matter, SO2 - sulfur dioxide, NOx - oxides of nitrogen, CO - carbon monoxide, HAPs - hazardous air pollutants.
[2] Emissions of individual HAPs each < 10 tpy and emissions of total HAPs combined <25 tpy. Actual total combined HAPs for 2006 < 1 tpy.

## 2.0 FACILITY DESCRIPTION AND LOCATION

### 2.1 Facility Location and Surrounding Area

Churchill Coatings Corporation owns and operates a clapboard painting facility located within the Precision Park industrial park in North Springfield, Vermont. The area surrounding the Facility is primarily industrial; however some residential development abuts the industrial park. The Facility is located less than 100 kilometers from the Lye Brook Wilderness area in Manchester, Vermont and greater than 100 kilometers from the Great Gulf and Dry River Wilderness areas in New Hampshire. A map is included in Attachment 1 of this technical support document.

### 2.2 Facility Description and Explanation of Process

Churchill Coatings Corporation applies coatings to clapboards and various other wood trim products used predominantly for residential building construction. These facilities are typically referred to as a pre-stain facility. Precut clapboards and trim boards are shipped to the facility by wholesalers or local retail lumber yards for painting. Churchill Coatings

Corporation then primes and/or paints the boards the specified color, air dries the lumber and ships them back. The Facility currently consists of two rollcoating machines used to apply the coatings on all four sides of the material. Typically only one line operates at a time. The boards are individually fed in one end of the machine by one person and retrieved from the opposite end and stacked on carts by a second individual. The carts are then pushed into drying rooms to air dry. The drying rooms are typically unheated but may circulate air to aid drying. The boards are air dried for approximately one day and then packaged up and returned to the wholesaler or lumber yard. Churchill Coatings Corporation works with retail lumber yards which offer the homeowner or contractor the service of prepriming and painting the materials purchased from the lumber yard in addition to supplying the wholesale market. The use of preprimed boards ensures uniform coverage and minimizes installation time. Preprimed boards may need only one coat of paint rather than two which also helps to minimize costs to the contractor or homeowner. Preprimed and prepainted boards may need some touch up work after being installed on the house to cover nails, cuts and damaged areas. Some lumber yards may purchase preprimed boards directly from a wholesaler who in turn had the boards primed at a prestaining facility.

The only regulated source of air contaminant emissions at the Facility is the coating operation and the associated volatile organic compound emissions that result. Several small, residential size fuel oil and propane furnaces are used to provide space heat in the winter for employees.

### 2.3 Description of Equipment

Equipment specifications are detailed in Table 2-1.

**Equipment Specifications**
**Coating Lines**

| Description | Installation Date |
|---|---|
| Roll coating line #1 | Prior to 1979 |
| Roll coating line #2 | 2000 |
| **Fuel Burning Equipment** | |
| **Description** | **Manufacturer/Installation Date** |
| 5 Small Propane Heaters, space heat | 2000 |
| No. 2 Fuel Oil Fired Furnace, space heat | Prior to 1998 |

### 2.4 Enforceable Operating Restrictions

The Permittee has the following permit limits:

(1) For each coating line, the Facility shall limit the monthly weighted average VOC content of all coating applied on that coating line to 3.5 pounds of VOC per gallon or less of coating, as applied (excluding water and exempt compounds). [§5-253.20(b)(2) of the Regulations]

Compliance with this limitation shall be based on the use of coatings that each contain less than 3.5 pounds of VOC per gallon of coating, as applied (excluding water and exempt compounds) or in the event any coating is applied during any given day that exceeds this limit, the Facility shall calculate the monthly weighted average for that coating line for that month. [§5-404 of the Regulations

[Permit AOP-00-016a]

(2) Emissions of volatile organic compounds ("VOCs") from coating line #1 shall not equal or exceed 50 tons per year based on any rolling twelve consecutive calendar month period. [10 V.S.A. §556(c)] [10 V.S.A. §556a(d)]

Compliance with this limitation shall be based on daily recordkeeping of the quantity of each coating used in the coating line and monthly calculations of the quantity of VOC emitted. For the purposes of these calculations, 100 percent of the VOC content of the coatings shall be assumed to be emitted. [§5-404 of the Regulations]

[Permit AOP-00-016a]

(3) Emissions of volatile organic compounds ("VOCs") from coating line #2 shall not equal or exceed 50 tons per year based on any rolling twelve consecutive calendar month period. [10 V.S.A. §556(c)] [10 V.S.A. §556a(d)]

Compliance with this limitation shall be based on daily recordkeeping of the quantity of each coating used in the coating line and monthly calculations of the quantity of VOC emitted. For the purposes of these calculations, 100 percent of the VOC content of the coatings shall be assumed to be emitted. [§5-404 of the Regulations]

[Permit AOP-00-016a]

## 3.0 QUANTIFICATION OF POLLUTANTS

The quantification of emissions from a stationary source is necessary in order to establish the regulatory review process necessary for the operating permit application and to determine applicability with various air pollution control requirements. These determinations are normally based upon allowable emissions. Allowable emission is defined as the emission rate calculated using the maximum rated capacity of the source and, if applicable, either: (a) the applicable emission standard contained in the *Regulations*, if any, or (b) the emission rate or design, operational or equipment standard specified in any order or agreement issued under the *Regulations* that is state and federally enforceable. An applicant may impose in its application an emission rate or design, or an operational or equipment limitation which may be incorporated in

the Permit to restrict operation to a lower level. Such limitations may include fuel restrictions or production limits.

### 3.1 Estimating Actual Emissions of Hazardous Air Contaminants from the Existing Stationary Source.

Based on the facility's annual registration information for the reporting years 2006 and 2005, the following table summarizes the estimated actual emission rate of HACs from the facility. To be conservative, for each HAC emitted, the year with the highest emission rate was used in this evaluation.

| Compound | Toxic Cat. | CAS # | 2006/2005 Emissions | | Action Level, lbs/8 hrs | Action Level Exceeded ? Y or N |
|---|---|---|---|---|---|---|
| | | | lbs/yr | lbs/8hr | | |
| Stoddard Solvent | 2 | 8052-41-3 | 528.255630 | 120.606307 | 1037.500000 | N |
| *Xylene | 2 | 1330-20-7 | 1.984000 | 0.045297 | 86.300000 | N |
| 1,2 Propanediol | 3 | 57-55-6 | 0.052000 | 0.000210 | 0.000047 | N |
| 1-Methoxy-2-Propanol | 3 | 107-98-2 | 0.237200 | 0.054155 | 151.000000 | N |
| *Ethyl Benzene | 3 | 100-41-4 | 0.206800 | 0.047215 | 1830.000000 | N |
| *Ethylene Gylcol | 3 | 107-21-1 | 2.158880 | 0.492895 | 53.000000 | N |

### 3.2 Estimating Actual Emissions from Combustion

Combustion source emissions from the combustion of the small quantity of fuel used for space heat burned at this Facility is insignificant.

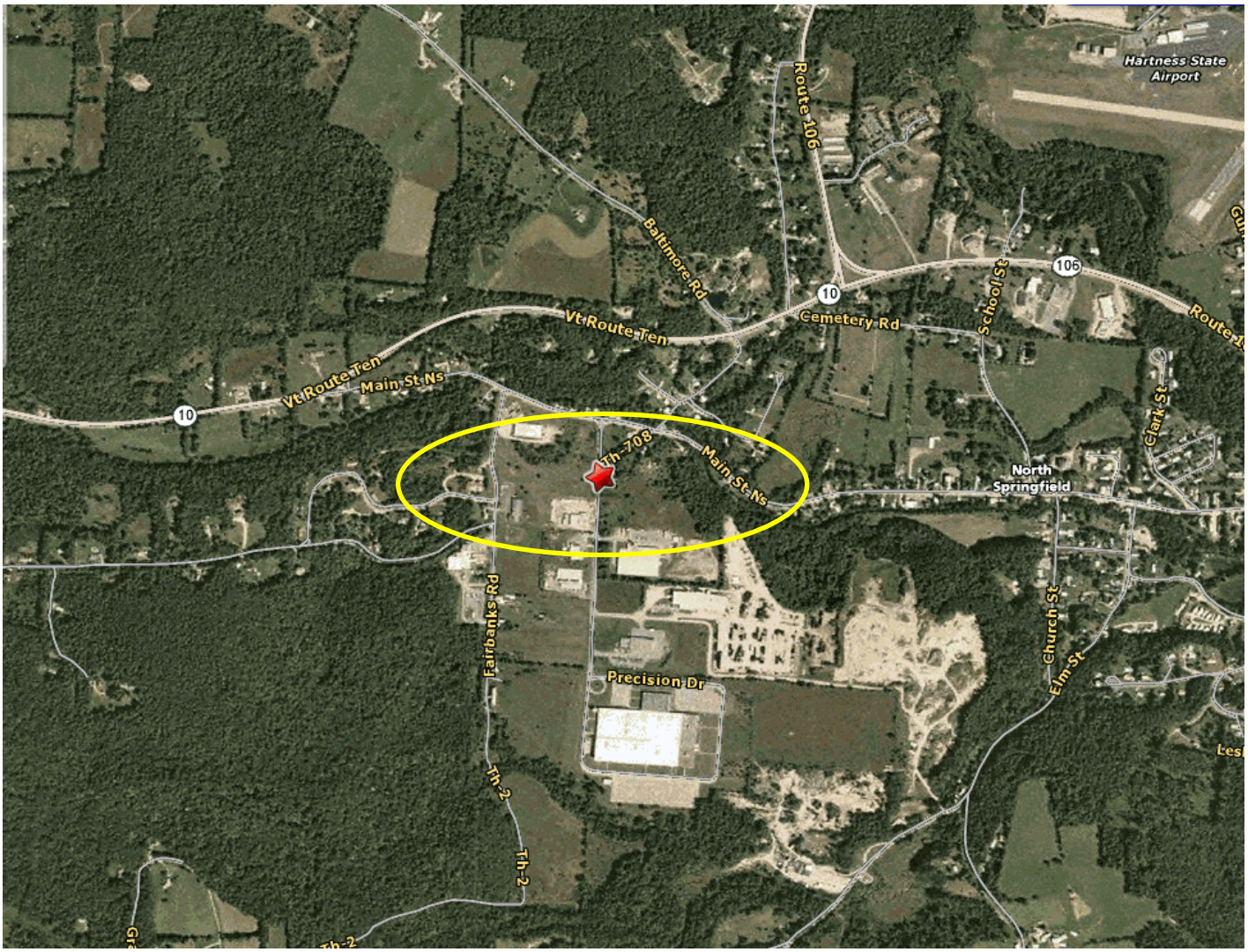
### 3.3 Estimating Actual VOC Emissions

Existing permit limits for VOC emissions shall be than 100 tons per year.

## APPENDICES

**APPENDIX A –** Map of Location

**APPENDIX A**

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A2 – Churchill Coatings Corporation – North Springfield