

**AIR EMISSION PERMIT NO. 04900065 - 004  
(Title V Re-issuance)  
IS ISSUED TO**

Bergquist Company

**BERGQUIST CO - CANNON FALLS**  
301 Washington Street West  
Cannon Falls, Goodhue County, MN 55009

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Permit Type	Application Date	Permit Issuance	Action Number
Part 70 – Total Facility Operating Permit Re-issuance	7/7/05	See below	-004

This permit authorizes the Permittee to operate and modify the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

**Permit Type:** Federal; Pt 70/Limits to Avoid NSR

**Issue Date:** July 17, 2006

(authorization to begin construction: 6/15/06)

**Expiration:** July 17, 2011

All Title I Conditions do not expire.

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Richard J. Sandberg, Manager  
Air Quality Permits Section  
Industrial Division

for Sheryl A. Corrigan  
Commissioner  
Minnesota Pollution Control Agency

## **TABLE OF CONTENTS**

**Notice to the Permittee**

**Permit Shield**

**Facility Description**

**Table A: Limits and Other Requirements**

**Table B: Submittals**

**Appendices: 1. Emission Calculation Equations  
2. Insignificant Activities**

**NOTICE TO THE PERMITTEE:**

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	(651) 296-6300
Outside Metro Area	1-800-657-3864
TTY	(651) 282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

**PERMIT SHIELD:**

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

## **FACILITY DESCRIPTION:**

The Bergquist Company (SIC code 3679) manufactures silicone rubber insulation products. In 1986, the facility was constructed. The process currently involves silicone milling, dispersion mixing, web coating, parts cleaning, and assembly operations. The facility currently consists of two buildings:

- Building One houses the Tower Coater PX-1, the Tower Coater PX-2, Lab Coater PX-3, the Primer Coater/Laminator PX-4, the Drum Mixing Area; and,
- Building Two houses warehousing and offices.

The following emission units have total enclosure: Tower Coater PX-1, Tower Coater PX-2, Lab Coater PX-3, Drum Mixing Area, and Primer Coater/Laminator (PX-4).

The facility has four thermal oxidizers. The emission units are routed to the thermal oxidizers as follows:

- Tower Coater PX-1 – Thermal Oxidizer (CE 001)
- Tower Coater PX-2 – Thermal Oxidizer (CE 002)
- Lab Coater PX-3 and Primer Coater/Laminator PX-4 – Thermal Oxidizer (CE 003)
- Drum Mixing Area – Thermal Oxidizer (CE 005)

The volatile organic compounds are captured and routed through the thermal oxidizers that operate at 1400 degrees Fahrenheit based on the manufacturers recommended operation of the thermal oxidizer (or at the most recent performance test levels). Capture of 100 percent and destruction of 95 percent is required.

The Tower Coater PX-1 was constructed or under contract prior to April 30, 1987, and are not subject to 40 CFR pt. 60, subp. VVV, “Standards for Polymeric Coating of Supporting Substrates Facilities” conditions. The remaining emission units (Tower Coater PX-2, the Drum Mixing Area and the Primer Coater/Laminator) were constructed after April 30, 1987. Hence, they are subject to 40 CFR pt. 60, subp. VVV. It is noted that equipment subject to 40 CFR pt. 60, subp. VVV has a 95 percent destruction efficiency requirement.

The criteria air pollutants of concern are the Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP). By accepting Title I conditions on EU 001 and NSPS subpart VVV requirements for EU 002 – EU 005, the facility is considered a PSD synthetic minor facility for HAP containing chemicals to control the emissions to a rate of less than 9.0 tons per year for one HAP and a combined limit of 22.5 tons per year for all HAPS. This enables the Permittee to remain a synthetic minor source for HAPS. The hazardous air pollutants of concern are xylene, toluene, glycol ether, and ethyl benzene.

In 1994, the Primer Coater/ Laminator and an associated thermal oxidizer were authorized. The 1994 permit also authorized the existing Lab coater to be moved.

## **ACTION 004**

This permit action authorizes the reissuance of the Part 70 total facility operating permit. In addition, this permit action replaces thermal oxidizer (CE 004) with thermal oxidizer (CE 005).

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Bergquist Co - Cannon Falls  
 Permit Number: 04900065 - 004

**Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.**

**Subject Item: Total Facility**

What to do	Why to do it
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0100-7009.0080.
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
When a performance test for VOC is conducted, report the results on an "as VOC" basis, accounting for the individual constituents of the gas stream.	
<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements.</p> <p>Performance Test Notifications (written): due 30 days before each Performance Test</p> <p>Performance Test Plan: due 30 days before each Performance Test</p> <p>Performance Test Pre-test Meeting: due 7 days before each Performance Test</p> <p>Performance Test Report: due 45 days after each Performance Test</p> <p>Performance Test Report - Microfiche: due 105 days after each Performance Test</p> <p>The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.</p>	Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Bergquist Co - Cannon Falls

Permit Number: 04900065 - 004

Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025
MONITORING REQUIREMENTS	hdr
Material Content: VOC and HAPs contents in coating materials shall be determined by the Material Safety Data Sheet (MSDS) or Environmental Data Sheet (EDS) provided by the supplier for each material used. If a material content range is given on the MSDS, the highest number in the range shall be used in all compliance calculations. Other alternative methods approved by the MPCA may be used to determine the VOC and HAPs. The Commissioner reserves the right to require the Permittee to determine the VOC and HAPs contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS or EDS.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21; Limit to avoid major source classification under 40 CFR Section 63.2
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
RECORDKEEPING	hdr
Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007. 0800, subp. 5(B)
REPORTING/SUBMITTALS	hdr
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.  At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.  At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-3

07/17/06

Facility Name: Bergquist Co - Cannon Falls

Permit Number: 04900065 - 004

Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emissions Inventory Report due 91 days after the end of each calendar year following Permit Issuance (April 1). To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3010
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Bergquist Co - Cannon Falls  
 Permit Number: 04900065 - 004

**Subject Item: GP 001 VOC and HAP Sources**

- Associated Items:** EU 001 Tower Coater #1  
 EU 002 Tower Coater #2  
 EU 003 Lab Coater  
 EU 004 Drum Mixing Station  
 EU 005 Primer Coater/ Laminator  
 SV 001 Tower Coater #1  
 SV 002 Tower Coater #2  
 SV 003 Lab Coater - Primer Coater Laminator  
 SV 005 Primer Coater/Laminator

What to do	Why to do it
EMISSION LIMITS	hdr
HAP-Single: less than or equal to 9.0 tons/year using 12-month Rolling Sum for GP 001 emission units. This limit includes HAPs from each HAP containing material (i.e., coatings, gun cleaner, parts washer, etc.). This limit does not include HAPs from the combustion of natural gas in the thermal oxidizers.	Title I Condition: To restrict total facility single HAP emissions to less than the major source level under 40 CFR Section 63.2
HAPs - Total: less than or equal to 22.5 tons/year using 12-month Rolling Sum for GP 001 emission units. This limit includes HAPs from each HAP containing material (i.e., coatings, gun cleaner, parts washer, etc.). This limit does not include HAPs from the combustion of natural gas in the thermal oxidizers.	Title I Condition: To restrict total facility HAP emissions to less than the major source level under 40 CFR Section 63.2
MONITORING AND RECORDKEEPING	hdr
Daily Recordkeeping: Once each day, when in operation, the Permittee shall record and maintain a record of the total quantity of each VOC- and HAP-containing material used in each GP 001 emission unit.	Title I Condition: To restrict total facility VOC emissions to less than the major source level under 40 CFR Section 52.21 and to restrict HAP emissions to less than the major source level in 40 CFR Section 63.2; Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2
Monthly Recordkeeping - VOC- and HAP-Containing Material Usage:  By the 15th day of each month, the Permittee shall calculate and record the total usage of each VOC- and HAP-containing material for the previous calendar month using the daily usage records including the VOC and HAP contents of each material as determined by the 'Material Content' requirement on page A-2.	Minn. R. 7007.0800, subps. 4 and 5
Monthly Recordkeeping - VOC and HAP Emissions:  By the 15th day of each month, the Permittee shall calculate and record the following:  1) The GP 001 VOC, single HAP, and total HAP emissions for the previous month using the formulas in the appendix of this permit;  2) The 12-month rolling sum GP 001 VOC, single HAP, and total HAP emissions for the previous 12-month period by summing the monthly emissions data for each pollutant for the previous 12 months.	Minn. R. 7007.0800, subps. 4 and 5
On-site Determination of Mixer VOC and/or HAP Emission Factor: The Permittee shall maintain a record of each determination made of a mixer VOC and/or HAP emission factor for use in equation(s) in the permit appendix for calculating mixer VOC and/or HAP emissions. The record shall be dated and identify the following:  1. mixer for which the determination was made; 2. material quantity and composition (type of chemical constituents of solvent) used in the determination; 3. pollutant for which the determination was made (i.e., VOC, methanol, etc.); and, 4. determined loss value in percent by weight.  A determination is valid only for the mixer on which it is made, and is valid for 60 months from the date of determination providing mix composition does not change and the mixer is not modified or changed in any manner. If a change is made to the mix composition or mixer, the Permittee shall re-determine the loss factor or use the default 10% factor described in the appendix.	Minn. R. 7007.0800, subps. 4 and 5



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Bergquist Co - Cannon Falls  
 Permit Number: 04900065 - 004

**Subject Item: GP 002 Emissions subject to NSPS part 60 subp. VVV**

- Associated Items:**
- CE 002 Direct Flame Afterburner
  - CE 003 Direct Flame Afterburner
  - CE 005 Direct Flame Afterburner
  - EU 002 Tower Coater #2
  - EU 003 Lab Coater
  - EU 004 Drum Mixing Station
  - EU 005 Primer Coater/ Laminator
  - SV 002 Tower Coater #2
  - SV 003 Lab Coater - Primer Coater Laminator
  - SV 005 Primer Coater/Laminator

What to do	Why to do it
<p>The affected facility to which the provisions of this subpart apply is each coating operation and each on-site coating mix preparation equipment used to prepare coatings for the polymeric coating of supporting substrates. EU 002, EU 003, EU 004, and EU 005 are affected facilities.</p> <p>Once a facility has become subject to the requirements of this subpart, it will remain subject to those requirements regardless of changes in annual volatile organic compounds (VOC) use.</p>	<p>40 CFR Section 60.740(a) and (b); Minn. R. 7011.3100</p>
<p>Coating operation means any coating applicator(s), flashoff area(s), and drying oven(s) located between a substrate unwind station and a rewind station that coats a continuous web to produce a substrate with a polymeric coating. Should the coating process not employ a rewind station, the end of the coating operation is after the last drying oven in the process.</p> <p>Coating mix preparation equipment means all mixing vessels in which solvent and other materials are blended to prepare polymeric coatings.</p> <p>Cover means, with respect to coating mix preparation equipment, a device that fits over the equipment opening to prevent emissions of VOC from escaping.</p>	<p>40 CFR Section 60.741(a); Minn. R. 7011.3100</p>
<p>LIMITS</p>	<p>hdr</p>
<p>Volatile Organic Compounds: greater than or equal to 95 percent control efficiency for each coating operation. The Permittee shall operate and maintain a total enclosure around the coating operation and vent the captured VOC emissions to a control device that is at least 95% efficient.</p>	<p>40 CFR Section 60.742(b)(2); Minn. R. 7011.3100</p>
<p>Volatile Organic Compounds: greater than or equal to 95 percent control efficiency for each affected coating mix preparation equipment. The Permittee shall install, operate, and maintain a cover on each piece of affected coating mix preparation equipment and vent VOC emissions from the covered mix equipment to a control device that is at least 95% efficient while preparation of the coating is taking place within the vessel.</p>	<p>40 CFR Section 60.742(c)(1); Minn. R. 7011.3100</p>
<p>Coating Operation Compliance Demonstration: For each affected coating operation subject to the standard specified in 40 CFR Section 60.742(b)(2), the Permittee shall:</p> <ol style="list-style-type: none"> <li>1. Demonstrate that a total enclosure is installed around the coating operation that is either approved by the Administrator or meets the requirements of 40 CFR Section 60.743(b)(1)(i) through (vi);                         <ol style="list-style-type: none"> <li>(i) The only openings in the enclosure are forced makeup air and exhaust ducts and natural draft openings such as those through which raw materials enter and exist the coating operation;</li> <li>(ii) Total area of all natural draft openings does not exceed 5 percent of the total surface area of the total enclosure's walls, floor, and ceiling;</li> </ol> </li> </ol>	<p>40 CFR Section 60.743(b); Minn. R. 7011.3100</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Bergquist Co - Cannon Falls

Permit Number: 04900065 - 004

<p>Coating Operation Compliance Demonstration Continued:</p> <p>(iii) All access doors and windows are closed during normal operations of the enclosed coating operation, except for brief, occasional openings to accommodate process equipment adjustments. If such openings are frequent, or if the access door or window remains open for a significant amount of time during the process operation, it must be considered a natural draft opening. Access doors used routinely by workers to enter and exit the enclosed area shall be equipped with automatic closure devices;</p> <p>(iv) Average inward face velocity across all natural draft openings is a minimum of 3,600 meters per hour as determined in 40 CFR 60.742(b)(1)(iv);</p>	<p>40 CFR Section 60.743(b); Minn. R. 7011.3100</p>
<p>Coating Operation Compliance Demonstration Continued:</p> <p>(v) The air passing through all natural draft openings flows into enclosure continuously. If the face velocity is less than or equal to 9,000 meters per hour, the continuous inward airflow shall be verified by continuous observation using smoke tubes, streamers, tracer gases, or other means approved by the Administrator over the period that the volumetric flow rate tests required to determine face velocity are carried out; and,</p> <p>(vi) All sources of emissions within the enclosure shall be a minimum of four equivalent diameters away from each natural draft opening.</p> <p>2. Determine the control efficiency using the equations referred to in 40 CFR Section 60.743(b)(2).</p>	<p>40 CFR Section 60.743(b); Minn. R. 7011.3100</p>
<p>Coating Mix Preparation Equipment Compliance Demonstration: The Permittee shall demonstrate compliance with 40 CFR Section 60.742(c)(1) upon inspection that:</p> <p>1. Covers satisfying the specifications in paragraphs 40 CFR Section 60.743(c)(1)(i) through (v) have been installed and are being properly operated and maintained;</p> <p>(i) Covers shall be closed at all times except when adding ingredients, withdrawing samples, transferring the contents, or making visual inspection when such activities cannot be carried out with cover in place;</p> <p>(ii) Cover shall extend at least 2 centimeters beyond the outer rim of the opening or shall be attached to the rim;</p> <p>(iii) Cover shall be of such design and construction that contact is maintained between cover and rim along the entire perimeter;</p>	<p>40 CFR Section 60.743(c)(1) - (3); Minn. R. 7011.3100</p>
<p>Coating Mix Preparation Equipment Compliance Demonstration Continued:</p> <p>(iv) Any breach in the cover shall be covered consistent with paragraphs (c)(1)(i), (ii), and (iii) of this section when not actively in use; and,</p> <p>(v) A polyethylene or nonpermanent cover may be used provided its meets the requirements of paragraphs 40 CFR Section 60.743 (c)(1)(ii), (iii), and (iv). Such a cover shall not be reused after once being removed.</p> <p>2. Procedures detailing the proper use of covers, as specified in paragraph 60.743(c)(1)(i), have been posted in all areas where affected coating mix preparation equipment is used; and,</p> <p>3. The affected coating mix preparation equipment is vented to a control device (thermal oxidizer) while preparation of the coating is taking place within the vessel.</p>	<p>40 CFR Section 60.743(c)(1) - (3); Minn. R. 7011.3100</p>
<p>Coating Mix Preparation Equipment Compliance Demonstration Continued: The Permittee shall demonstrate compliance with Section 60.742(c)(4) by determining the control efficiency using the equations referred to in 40 CFR Section 60.743(c)(4).</p>	<p>40 CFR Section 60.743(c)(4); Minn. R. 7011.3100</p>
<p>Monitoring: The Permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications, a monitoring device that continuously indicates and records the combustion chamber temperature of the thermal oxidizer that controls VOC emissions from an affected facility. The monitoring device shall have an accuracy within +/- 1 percent of the temperature being measured in Celsius degrees.</p>	<p>40 CFR Section 60.744(e); Minn. R. 7011.3100</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-7

07/17/06

Facility Name: Bergquist Co - Cannon Falls

Permit Number: 04900065 - 004

<p>Monitoring - Total Enclosure: The Permittee shall follow the procedures in Section 60.744(g) to establish a monitoring system for the total enclosure.</p> <p>To meet this requirement, the Permittee will monitor for proper operation of total enclosure using magnehelic or manometer pressure differential gauges. On a daily basis, the Permittee shall record the pressure reading for each total enclosure, when in operation. For EU 002, EU 003, EU 005, readings equal to or greater than 0.0 inches indicates a proper negative pressure is being maintained. For EU 004, readings equal to or greater than 0.0 (or operating condition during most recent approved performance test) indicates a proper negative pressure is being maintained. The recordings of the pressure at each total enclosure are to be entered into a log that is to be kept on-site.</p>	40 CFR Section 60.744(h); Minn. R. 7011.3100
<p>Monitoring - Total Enclosure Continued:</p> <p>In addition, the Permittee will monitor for proper operation of total enclosure self-closing doors (that maintain total enclosures for the affected facilities except during normal personnel entry and exit). The Permittee shall inspect the self-closing doors on a daily basis when the affected facilities are in operation, and keep a record of each daily inspection on-site.</p>	40 CFR Section 60.744(h); Minn. R. 7011.3100
<p>The Permittee shall record time periods of mixing or coating operations for the affected facility, when the thermal oxidizer is malfunctioning or not in use.</p>	40 CFR Section 60.744(i); Minn. R. 7011.3100
<p>The Permittee shall record time periods of mixing or coating operations for the affected facility, when the thermal oxidizer monitoring device is malfunctioning or not in use.</p>	40 CFR Section 60.744(j); Minn. R. 7011.3100

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Bergquist Co - Cannon Falls

Permit Number: 04900065 - 004

**Subject Item: GP 003 Thermal Oxidizers**

- Associated Items:**
- CE 001 Direct Flame Afterburner
  - CE 002 Direct Flame Afterburner
  - CE 003 Direct Flame Afterburner
  - CE 005 Direct Flame Afterburner
  - SV 001 Tower Coater #1
  - SV 002 Tower Coater #2
  - SV 003 Lab Coater - Primer Coater Laminator
  - SV 005 Primer Coater/Laminator

What to do	Why to do it
<p>Thermal oxidizers control emissions from the following:</p> <p>CE 001 controls Tower Coater PX-1 (EU 001)                      CE 002 controls Tower Coater PX-2 (EU 002)                      CE 003 controls Lab Coater PX-3 and Primer/Laminator Coater PX-4 (EU 003 and EU 005)                      CE 005 controls Drum Mixing Area (EU 004)</p>	<p>hdr</p>
<p>Volatile Organic Compounds: less than or equal to 95 percent destruction efficiency for CE 001, CE 002, CE 003, and CE 005. For calculating VOC emissions, the Permittee shall use the most current MPCA-approved stack test destruction efficiency data. The most current MPCA-approved data is as follows:</p> <p>CE 001 97.8%                      CE 002 96.1%                      CE 003 96.5%                      CE 005 95.0% (proposed installation 2006)</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and 63.2; Minn. R. 7007.3000</p>
<p>The Permittee shall operate each thermal oxidizer at the minimum temperature specified below (on an instantaneous basis) measured at the combustion chamber.</p> <p>CE 001: 1410F                      CE 002: 1400F                      CE 003: 1300F                      CE 005: 1400F</p> <p>The minimum temperature requirement for each shall not change until a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the average temperature recorded during the most recent MPCA-approved performance test.</p> <p>If the instantaneous oxidizer firebox temperature drops below the minimum temperature limit, and mixers or ovens controlled by the oxidizer are processing VOC-and/or HAP-containing materials, the VOC and HAP used during that time shall be considered uncontrolled (i.e., 0% destruction efficiency) until the average temperature limit is once again achieved. Operation of a thermal oxidizer below the required minimum temperature when controlling VOC and HAP emissions shall be reported as a deviation.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and 63.2; Minn. R.; 40 CFR Section 64.3</p>
<p>The Permittee shall operate and maintain the thermal oxidizer any time that any process equipment controlled by the thermal oxidizer is in operation.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and 63.2; Minn. R. 7007.3000; 40 CFR Section 64.7</p>
<p>Monitoring Equipment: The Permittee shall install and maintain thermocouples and strip chart recorders to conduct temperature monitoring and recording required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required. The monitoring device shall have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 2.5 degrees Celsius.</p> <p>The Permittee shall clearly indicate on the records kept by the temperature recording device when VOC-and/or HAP-containing materials are being used in process equipment (mixers and/or ovens) controlled by the thermal oxidizer.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and 63.2; Minn. R. 7007.3000; 40 CFR Section 64.7</p>
<p>The Permittee shall maintain a continuous hard copy readout (strip chart) or computer disk file of the temperature readings for the combustion chamber for each thermal oxidizer.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and 63.2; Minn. R. 7007.3000; 40 CFR Section 64.9</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Bergquist Co - Cannon Falls

Permit Number: 04900065 - 004

<p>Recording Device Monitoring: Upon startup of process equipment (mixers and/or ovens), the Permittee shall verify the temperature recording device is working and recording properly. If a process operates for more than 24 consecutive hours, the Permittee shall make this verification for each successive 24-hour period of process equipment operation. The Permittee shall maintain a written record of these verifications.</p> <p>The temperature recording device shall be equipped with a visual and audible alarm to notify operators if the oxidizer temperature falls below the minimum required temperature during operation of process equipment.</p>	<p>Minn. R. 7007.0800, subs. 4 and 5</p>
<p>Quarterly and Semi-Annual Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment external system components, including but not limited to the electrical systems, and accesible piping and duct work.</p> <p>At least semi-annually, the Permittee shall inspect the control equipment internal system components, including but not limited to the refractory and heat exchanger systems.</p> <p>The Permittee shall maintain a written record of the quarterly and semi-annual inspections and any corrective actions taken resulting from the inspection. This record is to be kept on-site.</p>	<p>Minn. R. 7007.0800, subs. 4, 5, and 14; 40 CFR Section 64.7</p>
<p>Annual Calibration: The Permittee shall calibrate the temperature monitor at least annually and shall maintain a written record of the calibration and any action resulting from the calibration.</p>	<p>Minn. R. 7007.0800, subs. 4, 5, and 14; 40 CFR Section 64.7</p>
<p>Corrective Actions: If the temperature of any thermal oxidizer is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O &amp; M Plan for the thermal oxidizer. The Permittee shall keep a record of the type and date of any corrective action taken.</p>	<p>Minn. R. 7007.0800, subs. 4, 5, and 14; 40 CFR Sections 64.7 and 64.9</p>
<p>Permitted Fuel: Natural gas or propane only.</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>PERFORMANCE TESTING</p>	<p>hdr</p>
<p>Performance Test: due 1,825 days after Permit Issuance (# 004) to measure VOC destruction efficiency for CE 001.</p> <p>For additional applicable performance test requirements see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1</p>
<p>Performance Test: due 1,825 days after Permit Issuance (# 004) to measure VOC destruction efficiency for CE 002.</p> <p>For additional applicable performance test requirements see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1</p>
<p>Performance Test: due 1,825 days after Permit Issuance (# 004) to measure VOC destruction efficiency for CE 003.</p> <p>For additional applicable performance test requirements see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1</p>
<p>Performance Test: due 180 days after Initial Startup to measure VOC destruction efficiency for CE 005.</p> <p>For additional applicable performance test requirements see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Bergquist Co - Cannon Falls

Permit Number: 04900065 - 004

**Subject Item:** EU 001 Tower Coater #1

**Associated Items:** CE 001 Direct Flame Afterburner

CE 005 Direct Flame Afterburner

GP 001 VOC and HAP Sources

SV 001 Tower Coater #1

What to do	Why to do it
LIMITS	hdr
Volatile Organic Compounds: greater than or equal to 95 percent control efficiency for the coating operation. The Permittee shall operate and maintain a total enclosure around the coating operation and vent the captured VOC emissions to a control device that is at least 95% efficient.	Title I Condition: Limit to avoid classification as major source under 40 CFR Section 52.2; Minn. R. 7007.3000
Upon request of the Commissioner, the Permittee shall demonstrate that a total enclosure is installed around the coating operation.	Minn. R. 7007.0800, subp. 4
Monitoring - Total Enclosure: The Permittee shall follow establish a monitoring system for the total enclosure.  To meet this requirement, the Permittee will monitor for proper operation of total enclosure using magnehelic or manometer pressure differential guages. On a daily basis, the Permittee shall record the pressure reading for each total enclosure, when in operation. Readings equal to or greater than 0.0 inches indicates a proper negative pressure is being maintained. The recordings of the pressure at each total enclosure are to be entered into a log that is to be kept on-site.	Title I Condition: Limit to avoid classification as major source under 40 CFR Section 52.2; Minn. R. 7007.3000
Monitoring - Total Enclosure Continued:  In addition, the Permittee will monitor for proper operation of total enclosure self-closing doors (that maintain total enclosures for the affected facilities except during normal personnel entry and exit). The Permittee shall inspect the self-closing doors on a daily basis when the affected facilities are in operation, and keep a record of each daily inspection on-site.	Title I Condition: Limit to avoid classification as major source under 40 CFR Section 52.2; Minn. R. 7007.3000
Corrective Actions: The Permittee shall take corrective action as soon as possible if the recorded pressure reading is outside the manufacturer's recommended operating range. Corrective actions shall return the pressure reading to within the permitted range. Corrective actions include, but are not limited to, those outlined in the O & M Plan. The Permittee shall keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subps. 4, 5, and 14
The Permittee shall record time periods of mixing for the affected facility, when the thermal oxidizer is malfunctioning or not in use.	Minn. R. 7007.0800, subp. 5
The Permittee shall record time periods of mixing for the affected facility, when the thermal oxidizer monitoring device is malfunctioning or not in use.	Minn. R. 7007.0800, subp. 5

**TABLE B: SUBMITTALS**

B-1 07/17/06

Facility Name: Bergquist Co - Cannon Falls  
Permit Number: 04900065 - 004

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send any application for a permit or permit amendment to:

AQ Permit Technical Advisor  
Industrial Division  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator  
Industrial Division  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak  
Air and Radiation Branch  
EPA Region V  
77 West Jackson Boulevard  
Chicago, Illinois 60604

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency  
Clean Air Markets Division  
1200 Pennsylvania Avenue NW (6204N)  
Washington, D.C. 20460

**TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**

B-2 07/17/06

Facility Name: Bergquist Co - Cannon Falls

Permit Number: 04900065 - 004

<b>What to send</b>	<b>When to send</b>	<b>Portion of Facility Affected</b>
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Testing Frequency Plan	due 60 days after Initial Performance Test of each GP 003 thermal oxidizer (CE 001, CE 002, CE 003, and CE 005) for VOC emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	GP003



**TABLE B: RECURRENT SUBMITTALS**

B-3 07/17/06

Facility Name: Bergquist Co - Cannon Falls

Permit Number: 04900065 - 004

What to send	When to send	Portion of Facility Affected
Quarterly Report	<p>due 30 days after end of each calendar quarter following Permit Issuance. In addition, the quarterly report shall describe:</p> <ol style="list-style-type: none"> <li>1. All periods during actual mixing or coating operations when a required monitoring device was malfunctioning or not operating; and,</li> <li>2. All periods during actual mixing or coating operations when the control device was malfunctioning or not operating.</li> </ol>	GP002
Quarterly Report	<p>due 30 days after end of each calendar quarter following Permit Issuance. The report shall describe all 3-hour periods (during coating operations) during which the average temperature of the thermal oxidizer is more than 28 degrees Celsius below the average temperature measured during the most recent performance test that demonstrated compliance.</p> <p>If during the calendar quarter, there were no 3-hour temperature values more than 28 degrees Celsius below the temperature during the most recent compliant performance test, the Permittee shall submit a semiannual statement indicating such.</p>	GP002
Semiannual Deviations Report	<p>due 30 days after end of each calendar half-year following Permit Issuance (004). The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31.</p>	Total Facility
Compliance Certification	<p>due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). Submit the certification to the Commissioner on a form approved by the Commissioner. This report covers all deviations experienced during the calendar year.</p>	Total Facility

APPENDIX MATERIAL

Facility Name: Bergquist Co - Cannon Falls

Permit Number: 04900065-004

**1. Emission Calculation Equations**

**VOC, and HAP Calculation Methods**

The Permittee shall calculate monthly emissions using the formulas below. Separate calculations shall be made for VOCs, each single HAP, and total HAP.

**VOC Emissions (tons) = A + D**

**Each Single HAP Emissions (tons) = B + E**

**Total HAP Emissions (tons) = C + F**

**A = Drying Oven VOC Emissions, in tons**

**A = [(U<sub>1</sub> x V<sub>1</sub> x (1-DE)) + (U<sub>2</sub> x V<sub>2</sub> x (1-DE)) + .....]/2000**

U<sub>#</sub> = amount of each VOC-containing material used in the previous month, in pounds per oven

V<sub>#</sub> = weight percent VOC in U<sub>#</sub>, as a fraction (e.g., 10 % is 0.10)

DE = VOC destruction efficiency for the applicable oven control system determined by MPCA-approved performance testing

**B = Drying Oven single HAP Emissions, in tons**

**B = [(U<sub>1</sub> x V<sub>1</sub> x (1-DE)) + (U<sub>2</sub> x V<sub>2</sub> x (1-DE)) + .....]/2000**

U<sub>#</sub> = amount of each single HAP-containing material used in the previous month, in pounds

V<sub>#</sub> = weight percent HAP in U<sub>#</sub>, as a fraction (e.g., 10 % is 0.10)

DE = single HAP destruction efficiency for the applicable control system determined by MPCA-approved performance testing

**C = Total Oven HAP, in tons**

**C = B<sub>1</sub> + B<sub>2</sub> + B<sub>3</sub> + B<sub>4</sub>...**

B<sub>1</sub> = monthly oven emissions of single HAP #1, in tons

B<sub>2</sub> = monthly oven emissions of single HAP #2, in tons

B<sub>3</sub> = monthly oven emissions of single HAP #3, in tons

B<sub>4</sub> = monthly oven emissions of single HAP #4, in tons

**D = Mixer VOC emissions, in tons**

**D = [(U<sub>1</sub> x V<sub>1</sub> x (1-DE) x EF) + (U<sub>2</sub> x V<sub>2</sub> x (1-DE) x EF) + .....]/2000**

U<sub>#</sub> = amount of each VOC-containing material used in mixer during the previous month, in pounds

V<sub>#</sub> = weight percent VOC in U<sub>#</sub>, as a fraction (e.g., 10 % is 0.10)

DE = VOC destruction efficiency of the applicable control system determined by MPCA-approved performance testing

EF = Mixer-specific VOC emission factor (Either determined by Permittee on a VOC mass loss basis where Loss % = (VOC In - VOC Out)/VOC In \* 100%; or 10/85 if not determined by Permittee (based on AP-42 4.2.2.7))

**E = Mixer single HAP emissions, in tons**

$$E = [(U_1 \times V_1 \times (1-DE) \times EF) + (U_2 \times V_2 \times (1-DE) \times EF) + \dots]/2000$$

U<sub>#</sub> = amount of each single HAP-containing material used in mixer during the previous month, in pounds

V<sub>#</sub> = weight percent VOC in U<sub>#</sub>, as a fraction (e.g., 10 % is 0.10)

DE = single HAP destruction efficiency for thermal oxidizer CE 001 determined by MPCA-approved performance testing EF = Mixer-specific HAP emission factor (either determined by Permittee on a HAP mass loss basis where Loss % = (HAP In - HAP Out)/HAP In \* 100%; or 10/85 if not determined by Permittee (based on AP-42 4.2.2.7))

**F = Total Mixer HAP, in tons**

$$F = E_1 + E_2 + E_3 + E_4 \dots$$

E<sub>1</sub> = monthly mixer emissions of single HAP #1, in tons

E<sub>2</sub> = monthly mixer emissions of single HAP #2, in tons

E<sub>3</sub> = monthly mixer emissions of single HAP #3, in tons

E<sub>4</sub> = monthly mixer emissions of single HAP #4, in tons

## 2. Insignificant Activities and Applicable Requirements

Minn. R. 7007.1300, subpart 3	Rule Description of the Activity	Applicable Requirement
3(A)	Fuel use: 19 space heaters fueled by natural gas.	Minn. R. 7011.0515
3(B)	Infrared electric (baking) oven; and	Minn. R. 7011.0110
3(G)	Emissions from a laboratory (lab hood), as defined in the subpart.	Minn. R. 7011.0110
3(I)	Individual emissions units ( 2- 2,000 gallon xylene tanks, touch-screen manufacturing) at a stationary source, each of which have a potential to emit the following pollutants in amounts less than:  2,000 lbs/year each of volatile organic compounds (including hazardous air pollutant-containing VOC).	Minn. R. 7011.1505, subp. 3(A), Minn. R. 7011.0110
3(J)	Fugitive Emissions from roads and parking lots.	Minn. R. 7011.0150
3(K)	Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source, such as spray painting of buildings, machinery, vehicles, and other supporting equipment.	Minn. R. 7011.0110
<b>Minn. R. 7008.4110</b>	Emissions from milling area equipment venting particulate matter (PM) or particulate matter less than 10 microns (PM-10) inside a building, provided that emissions from the equipment are vented inside of the building 100% of the time.	Minn. R. 7011.0715

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 04900065-004**

This Technical Support Document (TSD) is intended for all parties interested in the permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the permit.

**1. General Information**

**1.1. Applicant and Stationary Source Location:**

Applicant/Address	Stationary Source/Address (SIC Code: 3679)
18930 West 78 <sup>th</sup> Street Chanhassen, MN 55317	301 Washington Street West Cannon Falls Goodhue County
Contact: Richard Miles Phone: (952) 820-6538	Contact: Paul Pedersen Phone: (507) 263-3766

**1.2. Description of the Permit Action**

The Bergquist Company (SIC code 3679) manufactures silicone rubber insulation products. In 1986, the facility was constructed. The process currently involves silicone milling, dispersion mixing, web coating, parts cleaning, and assembly operations. The facility currently consists of two buildings:

- Building One houses the Tower Coater PX-1, the Tower Coater PX-2, Lab Coater PX-3, the Primer Coater/Laminator PX-4, the Drum Mixing Area; and,
- Building Two houses warehousing and offices.

The following emission units have total enclosure: Tower Coater PX-1, Tower Coater PX-2, Lab Coater PX-3, Drum Mixing Area, and Primer Coater/Laminator (PX-4).

The facility has four thermal oxidizers. The emission units are routed to the thermal oxidizers as follows:

- Tower Coater PX-1 – Thermal Oxidizer (CE 001)
- Tower Coater PX-2 – Thermal Oxidizer (CE 002)
- Lab Coater PX-3 and Primer Coater/Laminator PX-4 – Thermal Oxidizer (CE 003)
- Drum Mixing Area – Thermal Oxidizer (CE 005)

The volatile organic compounds are captured and routed through the thermal oxidizers that operate at 1400 degrees Fahrenheit based on the manufacturers recommended operation of the thermal oxidizer (or at the most recent performance test levels). Capture of 100 percent and destruction of 95 percent is required.

The Tower Coater PX-1 was constructed or under contract prior to April 30, 1987, and is not subject to 40 CFR pt. 60, subp. VVV, “Standards for Polymeric Coating of Supporting Substrates Facilities” conditions. The remaining emission units (Tower Coater PX-2, the Drum Mixing Area and the Primer Coater/Laminator) were constructed after April 30, 1987. Hence, they are subject to 40 CFR pt. 60, subp. VVV. It is noted that equipment subject to 40 CFR pt. 60, subp. VVV has a 95 percent destruction efficiency requirement.

The criteria air pollutants of concern are the Volatile Organic Compounds (VOCs) and Hazardous Air Pollutants (HAP). By accepting Title I conditions to EU 001 and NSPS subpart VVV requirements for EU 002 – EU 005, the facility is considered a PSD synthetic minor facility for VOCs. 40 CFR § 52.21. In addition, the Permittee has chosen to limit the amount of HAP containing chemicals to control the emissions to a rate of less than 9.0 tons per year for one HAP and a combined limit of 22.5 tons per year for all HAPS. This enables the Permittee to remain a synthetic minor source for HAPS. The hazardous air pollutants of concern are xylene, toluene, glycol ether, and ethyl benzene.

In 1994, the Primer Coater/ Laminator and an associated thermal oxidizer were authorized. The 1994 permit also authorized the existing Lab coater to be moved.

**1.3 Description of any Changes Allowed with this Permit Issuance**

This permit action authorizes the re-issuance of the Part 70 total facility operating permit. In addition, this permit action authorizes the replacement of thermal oxidizer CE 004 (1,900 SCFM - 1.4 MMBtu/hr) with thermal oxidizer CE 005 (8,000 SCFM – 5.0 MMBtu/hr). The only emission increases associated with this permit action result in the increase in the size of the thermal oxidizer replacement (CE 005).

**1.4 Description of All Amendments Issued Since the Issuance of the Last Total Facility Permit**

<b>Permit Number and Issuance Date</b>	<b>Action Authorized</b>
04900065-001 Jan. 3, 2001	Part 70 Total Facility Operating Permit issuance
04900065-002 Nov. 7, 2003	The amendment incorporates revised thermal oxidizer temperature limits that have been imposed through performance testing. This was a mandatory re-opening.
04900065-003 Sept. 6, 2005	The amendment incorporates revised thermal oxidizer temperature limits that have been imposed through performance

<b>Permit Number and Issuance Date</b>	<b>Action Authorized</b>
	testing. This was a mandatory re-opening.

**1.5. Facility Emissions:**

**Table 1. Total Facility Potential to Emit Summary**

Table 1. Total Facility Potential to Emit Summary:

EU #	SV#	Emission Unit Description	PM tpy	PM <sub>10</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
001	001	Tower coater 1	0.29	0.29	0.01	5.33	2.03	69.41	21.05	45.60
002	002	Tower coater 2	0.44	0.44	0.02	8.00	3.05	50.43	36.16	57.36
003	003	Lab coater	.21	.21	0.01	3.86	1.47	9.63	1.88	3.12
004	004	Drum Mixer	.25	0.25	0.01	4.60	1.75	17.33	7.03	13.24
005	003	Primer coater laminator						18.37	7.10	10.17
Total Facility Limited Potential Emissions*			1.19	1.19	0.05	21.79	8.30	165.17*	9.0*	22.5*
Total Facility Actual Emissions (2004)			0.30	0.30	0.02	4.00	0.03	10.03	HAPs not reported in emission inventory	HAPs not reported in emission inventory

Differences between these emissions (004) and those found in the initial Part 70 Operating Permit (001) are due to:

- changes in natural gas and use of propane emission factors;
- changes in materials; and,
- increase in the size 5.0 MMBtu/hr, rather than 1.4, MMBtu/hr thermal oxidizer replacement (CE 005).

**Table 2. Facility Classification**

<b>Classification</b>	<b>Major/Affected Source</b>	<b>Synthetic Minor</b>	<b>Minor</b>
PSD		VOC	PM, PM10, SO <sub>x</sub> , NO <sub>x</sub> , CO,
Part 70 Permit Program	VOC		PM10, SO <sub>x</sub> , NO <sub>x</sub> , CO,
Part 63 NESHAP		X	

\* Refers to potential emissions that are less than those specified as major by 40 CFR § 52.21, 40 CFR pt. 51 Appendix S, and 40 CFR pt. 70.

## **2. Regulatory and/or Statutory Basis**

### New Source Review

The facility is an existing major source under New Source Review regulations. No changes are authorized by this permit.

### Part 70 Permit Program

The facility is a major source under the Part 70 permit program.

### New Source Performance Standards (NSPS)

The facility operates mixing, coating, and drying process equipment that are subject to part 60 subp. VVV, Standards of Performance for Polymeric Coating of Supporting Substrate Facilities. Affected facilities, including Tower Coating PX-1, which was in operation prior to April 30, 1987, is not subject to this NSPS.

### National Emission Standards for Hazardous Air Pollutants (NESHAP)

The facility has accepted limits on HAP usage so that it is a non-major source under 40 CFR pt. 63. Thus, no NESHAPs apply.

### Minnesota State Rules

Portions of the facility (insignificant activities) are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process
- Minn. R. 7011.0110 Visible Emission Restrictions for New Facilities



**Table 3. Regulatory Overview of Facility**

EU, GP, or SV	Applicable Regulations	Comments:
GP 001	Title I limits to avoid NESHAPs	Limit set on HAPs emissions from coating operations to avoid major source classification under 40 CFR § 63.
GP 002	40 CFR part 60 subpart VVV	Standards of Performance for Polymeric Coating of Supporting Substrates
GP 003	Title I Conditions: to avoid major source status under NSR and § 63.2	Thermal Oxidizer operation and monitoring requirements

**3. Technical Information**

**Total Facility VOC Annual Limit**

A total facility VOC annual limit was requested by the facility. EU 002, EU 003, EU 004, and EU 005 are subject to NSPS requirements of total enclosure with a 95 percent destruction efficiency. EU 001 has a Title I condition of total enclosure with a 95 percent destruction efficiency. Calculations, of the overall facility using these restrictions, demonstrates that total facility VOC PTE to be 165.17 tpy. Hence, it is not plausible for the facility to exceed the PSD threshold of 250 tpy. This is supported by 2004 actual VOC emissions of 12 tpy.

**CAM**

CAM provisions are applicable to all of the thermal oxidizers. The Permittee (i.e., consultant) disagreed and did not submit a CAM plan. The permit, satisfies the CAM provisions. No additional CAM provisions were added. CAM citations were added to the permit. Excursions were not included with the CAM permit language. The permit already contained minimum temperature requirements. In such a case, excursions did not seem functional.

**MONITORING APPROACH**

I. Indicator	Chamber temperature
	The chamber temperature is monitored
II. Indicator Range	An exceedance is defined as temperature readings less than temperature provided in permit; exceedances trigger corrective action and a reporting requirement.
III. Performance Data	The sensor is located in the combustion chamber as an integral part of the oxidizer design. The minimum tolerance of the thermocouple is +/- 2.5 degrees Celsius or +/- 0.75%, whichever is lesser.
A. Data Representativeness	

B. Verification of Operational Status	Not applicable
C. QA/QC Practices and Criteria	Quarterly and Semi-annual Inspections of the oxidizer. Also the temperature monitor is calibrated annually.
D. Monitoring Frequency	Measured continuously
Data Collection Procedure	Recorded on a continuous hard copy (strip chart) or computer disk file of the combustion chamber temperature
Averaging Period	No average is taken

### **MEK Delisting**

MEK has recently been delisted as a HAP. Accordingly, MEK is not treated as a HAP in this permit effort.

### **Lab Coater**

Based on information provided in the initial Part 70 operating permit issuance technical support document, the lab coater was apparently constructed or under contract prior to April 30, 1987. The Part 70 operating permit, however, subjects the lab coater to 40 CFR pt. 60, subp. VVV. When asked about this, it was noted that the lab coater was moved to Cannon Falls from the Edina facility. The lab coater was in operation prior to PX-1. Apparently, no modifications were made to the unit. The initial Part 70 operating permit included the lab coater as being subject to subp. VVV. No explanation as to why was found. Accordingly, the lab coater remains subject to 40 CFR pt. 60, subp. VVV, “Standards for Polymeric Coating of Supporting Substrates Facilities” conditions.

### **Misc. Permit Language Cleanup**

Miscellaneous changes were made throughout the permit to “cleanup” the existing permit language.

### **EU 001**

EU 001 is not subject to 40 CFR pt. 60, subp. VVV, “Standards for Polymeric Coating of Supporting Substrates Facilities” conditions. The EU 001 has a total enclosure requirement. Accordingly, requirements addressing the total enclosure were added.

## **10 Percent Mixing Emissions**

AP-42 provides that the drum emissions are to be 10 percent of the total material. The Permittee has provided that 10 percent of the air flow goes out the stack and 85 percent goes across the mixers. Hence, a 10/85 factor is used rather than the 10 percent. This adds a degree of conservatism for fugitive emissions.

### **3.1 Calculations of Potential to Emit**

Delta contains a detailed spreadsheet prepared by the MPCA and the Permittee.

### **3.2 Air Permit Consultation**

As per the recent MPCA policy pertaining to Minnesota Tribe's consultation, Mr. Craig Wills, from Prairie Island, was contacted (on May 3, 2006) about the forthcoming public notice.

### **3.3 Periodic Monitoring**

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considers the following:

- The likelihood of violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

Table 4 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

**Table 4. Periodic Monitoring**

<b>Emission Unit or Group</b>	<b>Requirement (basis)</b>	<b>Additional Monitoring</b>	<b>Discussion</b>
GP 001 HAP sources	Title I Limits: Single HAP less than or equal to 9.0 tpy, and total HAP less than or equal to 22.5 tpy to avoid part 63. All limits on a 12-month rolling sum basis	Recordkeeping: Records for taken on a daily of material usage; On-going MSDS records of coating contents; Monthly calculations of emissions.	Records are to be generated on a daily basis.
GP 002 NSPS Subp VVV	VOC total enclosure and destruction efficiency and requirements as required by part 60 subp. VVV	Thermal oxidizer temperature monitoring; periodic performance testing to verify destruction efficiency	Thermal oxidizer testing to verify destruction efficiency for VOC and certain HAPs. Temperature of the oxidizer is a direct indication of destruction efficiency and is readily monitored. Total enclosure testing does not need to be repeated unless room configuration or any enclosure components (fans, vents/other openings, doors, etc) are changed. Oxidizer destruction efficiency retesting is required to update destruction efficiency data obtained from the initial Part 70 operating permit testing.
GP 003 Thermal Oxidizers	Title I thermal oxidizer operating requirements to maintain VOC and HAP destruction efficiencies to avoid NSR and part 63 major source levels	3-hour average temperature of each thermal oxidizer combustion chamber	Oxidizer destruction efficiency is influenced by oxidizer operating temperature, turbulence/mixing of emissions and oxidizer flame, and residence time. Temperature is a variable that is readily measured to ensure maximum destruction efficiency.
Insignificant Activities	Minn. R. 7011.0715		All units use natural gas. Likelihood of violating emission is very small.

### 3.4 Insignificant Activities

The Permittee has several operations which are classified as insignificant activities. These are listed in Appendix to the permit. These insignificant activities include:

Minn. R. 7007.1300, subpart 3	Rule Description of the Activity	Applicable Requirement	VOC PTE (tpy)*
3(A)	Fuel use: 19 space heaters fueled by natural gas.	Minn. R. 7011.0515	.076
3(B)	Infrared electric (baking) oven as part of PX-8 curing line.	Minn. R. 7011.0110	.24
3(G)	Emissions from a laboratory (lab hood), as defined in the subpart.	Minn. R. 7011.0715	0.14 (xylene)
3(I)	Individual emissions units ( 2- 2,000 gallon xylene tanks, touch-screen manufacturing) at a stationary source, each of which have a potential to emit the following pollutants in amounts less than:  2,000 lbs/year each of volatile organic compounds (including hazardous air pollutant-containing VOC).	Minn. R. 7011.1505, subp. 3(A), Minn. R. 7011.0715	0.006 each, 0.05
3(J)	Fugitive Emissions from roads and parking lots.	Minn. R. 7011.0150	(PM)
3(K)	Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source, such as spray painting of buildings, machinery, vehicles, and other supporting equipment.	Minn. R. 7011.0715	-

\* VOC PTE values provided by the Consultant and used in previous permit actions.

### 3.5 Comments Received

Public Notice Period: May 12, 2006 – June 12, 2006  
EPA 45-day Review Period: May 12, 2006 – June 28, 2006>

Two comment letters were received during the public notice period. One comment letter was from a neighboring business. The neighboring business commented that they had not experienced any offensive odors coming from the Bergquist facility. The second comment letter was from a neighbor. Her comment letter provided in part:

I have had a history of concern about the Nuisance Odor from Bergquist that has affected my personal living space, yard and immediate neighborhood. When this odor is present my neighbors and I are unable to enjoy the outdoors. The odor is a chemical smell and I along with others believe it is coming from Bergquist.

The MPCA and other agencies along with Cannon Falls City Hall has documentation of my complaints and other complaints from neighbors and the community of Cannon Falls. I would ask that if need be they are entered into this record.

My request is that the odor be confined to the facility itself and not be allowed to go past the boundaries of the facility. When and if the fugitive odor continues in the future I would ask that something is set in place to take and document complaints that would cause Bergquist to further investigate what it needs to do to contain such odor.

The MPCA was aware of the odor issues. The intent of this permit authorization is to install a larger oxidizer to address the odor issues.

Comments were not received from EPA during their review period. Changes to the permit were not made as a result of the comments.

#### **4. Conclusion**

Based on the information provided by Bergquist, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 04900065-004, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team:     Bruce Braaten (permit writer/engineer)  
                                                   Greg Berger (enforcement)  
                                                   John Chikkala (peer reviewer)

Attachments: Public Notice Comments