

**AIR EMISSION PERMIT NO. 05300143- 003**

**IS ISSUED TO**

Tennant Co

**TENNANT CO - GOLDEN VALLEY**

701 Lilac Drive North  
Golden Valley, Hennepin County, MN 55422

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
Total Facility Operating Permit	June 15, 1995
Major Amendment	September 17, 2004
Major Amendment	February 1, 2007

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:** State; Limits to Avoid Pt 70/Limits to Avoid NSR

**Issue Date:** July 3, 2007

**Expiration:** Permit does not expire  
All Title I Conditions do not expire.

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

for Brad Moore  
Commissioner  
Minnesota Pollution Control Agency

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**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:**

Tennant Company manufactures industrial floor maintenance equipment at its plant in Golden Valley, Minnesota. The main sources of air emissions at the facility include fuel combustion and painting. The portions of the facility that qualify as Insignificant Activities under Minn. R. 7007.1300, subp. 3 and 4 are listed in Appendix I.

The facility has taken limits to avoid major source classification for New Source Review (40 CFR § 52.21) in an air emissions permit issued in 1993. These limits are carried forward in this permit along with new limits to avoid major source classification for Part 70 and National Emission Standards for Hazardous Air Pollutants (HAP) (40 CFR pt. 63).

The permit contains requirements that limit emissions of Volatile Organic Compounds (VOC), Particulate Matter (PM), combustion pollutants and HAP.

## **Permit Action 002**

Tennant's Part 70 permit issued on July 24, 2001 (05300143-001) allows the Golden Valley facility to emit Carbon Monoxide (CO) and HAP at levels that make the facility a major source under Part 70 and Part 63. Tennant subsequently added a powder coating system as an insignificant modification under Minn. R. 7007.1250, subp. 1(B). In the application received on September 17, 2004, Tennant proposed to remove the touch-up spray booth (EU 008), add the powder coating system to the permit, and accept a lower limit on engine testing (GP 002) gasoline usage. The effect of these changes along with the addition of enforceable limits on HAP emissions at the existing wet spray booths (GP 001) were a reduction of the facility's potential CO and HAP emissions so that it was no longer a major source under Part 70 and Part 63. Amending existing permit conditions to allow a facility to avoid classification as a major source requires a major permit amendment pursuant to Minn. R. 7007.1500, subp. 1(C).

The proposed powder coating system consists of an application system, pre-wash system, dry-off oven, and cure oven. In their application, Tennant states that the powder coat application system is not vented and that the MSDSs and coating vendors indicate that the powder coatings do not contain VOCs or HAP. The pre-wash system and dry-off oven qualify as insignificant activities under Minn. R. 7007.1300, subp. 3(I) and are included in Appendix I of the permit. The powder coat cure oven does not qualify as an insignificant activity and is included as a new emission unit (EU 029)

Permit 05300143-001 authorized the installation of a new engine testing area (EU 023). The authorization to install this unit has been eliminated. However, Permit No. 05300143-002, authorized Tennant to install 5 additional engine testing areas with a maximum of 7 drops per area. No emission unit numbers were assigned at this time, the emission unit numbers will be assigned upon notification from the facility that they have been added.

With the facility switching from a Part 70 permit to a state permit, the three make-up air units and the chemical repack operations may no longer be considered insignificant activities under Minn. R. 7007.1300, subp. 4. These existing units/activities have been removed from the list of insignificant activities and have been added to the permit as emission units (EU 025, EU 026, EU 027, and EU 028).

### **Permit Action 003**

Tennant Company currently operates under a State Operating Permit as a synthetic minor PSD source and synthetic minor Part 70 source. This expedited permitting action authorizes the addition of seven laser cutters, additional welding equipment, removal of spray booths, and modification of a Title 1 limit on the emissions of HAP. Because this permit action modifies an existing Title 1 limit it is considered a major permit amendment.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-1

07/03/07

Facility Name: Tennant Co - Golden Valley

Permit Number: 05300143 - 003

**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**

<b>What to do</b>	<b>Why to do it</b>
This permit establishes limits on the facility to keep it a minor source under New Source Review, Part 70, and Part 63. The Permittee cannot make any change at the source that would make the source a major source under New Source Review, Part 70, and/or Part 63 until the appropriate permit or permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications, minor amendments, or moderate amendments.	Title I Condition: Limit to avoid classification as major source under 40 CFR Section 52.21 and Minn. R. 7007.3000, and 40 CFR Section 70.2 and Minn. R. 7007.0200
Labeling Requirement: The permittee shall permanently affix the emissions unit number to each boiler, paint booth, and engine exhaust area for tracking purposes within 60 days of permit issuance. The number can be affixed by placard, stencil, or other means. The number shall be maintained so that it is readable and visible at all times from a safe distance.	Minn. R. 7007.0800, subp. 2
STANDARD REQUIREMENTS	ndr
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 shall include a preventative maintenance program for that equipment, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment 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 the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Monitoring Equipment: Install or make needed repairs to monitoring equipment within 60 days of issuance of the permit if monitoring equipment is not installed and operational on the date the permit is issued.	Minn. R. 7007.0800, subp. 4(D)
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)
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
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

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-2**

07/03/07

Facility Name: Tennant Co - Golden Valley

Permit Number: 05300143 - 003

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
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
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
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)
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
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)
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)
Record keeping: 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)
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
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
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)
Emission Inventory Report: due 91 days after 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****A-3**

07/03/07

Facility Name: Tennant Co - Golden Valley

Permit Number: 05300143 - 003

**Subject Item: GP 001 VOC Usage Limits****Associated Items:** EU 005 Off-Line Booth

EU 028 Chemical Room Repack Operations

SV 029 Repack Operations

What to do	Why to do it
A. LIMITS	hdr
<p>Volatile Organic Compounds: less than or equal to 40 tons/year to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit.</p> <p>All emission units added to GP 001 as allowed in this permit shall be included in this calculation. VOC contents for each VOC-containing material shall be determined as described under the Material Content requirement in GP 001. The calculation of VOCs emitted may take into account waste VOCs as described under the Waste Credit requirement in GP 001.</p>	Title I Condition: Limit to avoid classification as major source under 40 CFR Section 52.21 and Minn. R. 7007.3000, and 40 CFR Section 70.2 and Minn. R. 7007.0200
<p>HAP-Single: less than or equal to 4.0 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit.</p> <p>All emission units added to GP 001 as allowed in this permit shall be included in this calculation. HAP contents for each HAP-containing material shall be determined as described under the Material Content requirement in GP 001. The calculation of HAPs emitted may take into account waste HAPs as described under the Waste Credit requirement in GP 001.</p>	Title I Condition: Limit to avoid major source classification under 40 CFR Section 70.2, 40 CFR Section 63.2, and Minn. R. 7007.0200
<p>HAPs - Total: less than or equal to 12.0 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit.</p> <p>All emission units added to GP 001 as allowed in this permit shall be included in this calculation. HAP contents for each HAP-containing material shall be determined as described under the Material Content requirement in GP 001. The calculation of HAPs emitted may take into account waste HAPs as described under the Waste Credit requirement in GP 001.</p>	Title I Condition: Limit to avoid major source classification under 40 CFR Section 70.2, 40 CFR Section 63.2, and Minn. R. 7007.0200
The Permittee shall vent emissions from all spray booths to control equipment meeting the requirements of GP 004. Each booth shall be controlled with specific control equipment as described in Appendix II of this permit.	Title I Condition: Limit to avoid classification as major source under 40 CFR Section 52.21 and Minn. R. 7007.3000, and 40 CFR Section 70.2 and Minn. R. 7007.0200
<p>The Permittee may replace listed emission units with emissions units similar to those listed in GP 001, may install additional spray equipment in existing booth, and may modify the emission units listed in GP 001, provided that:</p> <ol style="list-style-type: none"> <li>1. VOC, single HAP, and total HAP emissions are tracked and calculated directly from material usage;</li> <li>2. The total maximum spray capacity in EU 005 remains less than or equal to those listed in Appendix II of this permit; and</li> <li>3. The permit contains all applicable requirements for the change.</li> </ol> <p>All changes must meet the requirements for GP 001. If a proposed change triggers an applicable requirement that is not contained in this permit, the change must go through the appropriate procedure in Minn. R. ch. 7007.</p>	Title I Condition: Limit to avoid classification as major source under 40 CFR Section 52.21 and Minn. R. 7007.3000, and 40 CFR Section 70.2 and Minn. R. 7007.0200
Spray Gun Transfer Efficiency: The Permittee shall use spray guns that meet the minimum transfer efficiencies used in the potential to emit calculations in the Technical Support Document for this permit. Specifically, guns used in EU 005, shall have minimum manufacturer specified transfer efficiencies of 40% or greater.	Minn. R. 7007.0800, subp. 2
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn R. 7011.0730 or Minn. R. 7011.0735. This limit applies separately to each emissions unit.	Minn. R. 7011.0710, subp. 1(A) or Minn. R. 7011.0715, subp. 1(A), as applicable
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. This applies separately to each emissions unit that was in operation before July 9, 1969, and that has not been modified after that date. As of permit issuance, this applies to EU 005.	Minn. R. 7011.0710, subp. 1(B)
B. MONITORING REQUIREMENTS	hdr



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-4**

07/03/07

Facility Name: Tennant Co - Golden Valley

Permit Number: 05300143 - 003

Daily Recordkeeping. The Permittee shall record and maintain the identification of each VOC and/or HAP-containing paint and cleaning material container opened on a daily basis. This requirement only applies to EU 005. VOC and HAP usage for EU 028 only needs to be calculated, recorded, and maintained as utilized.	Title I Condition: Monitoring for Limit to avoid classification as major source under 40 CFR 52.21 and Minn. R. 7007.3000, 40 CFR 70.2 and Minn. R. 7007.0200, and Minn. R. 7007.0800, subp. 4 and 5
Monthly Recordkeeping: By the 15th day of each month, the Permittee shall calculate, record, and maintain the total quantity of all coatings and other VOC and HAP-containing materials used in GP 001 during the previous calendar month. This shall be based on production records, written usage logs, and/or delivery records.	Title I Condition: Monitoring for Limit to avoid classification as major source under 40 CFR 52.21 and Minn. R. 7007.3000, 40 CFR 70.2 and Minn. R. 7007.0200, and Minn. R. 7007.0800, subp. 4 and 5
Monthly Recordkeeping -- VOC, Each Individual HAP, and Total HAP Emissions. By the 15th of the month, the Permittee shall calculate and record the following: 1) The total usage of VOC and HAP-containing materials for the previous calendar month using the daily and/or monthly usage records. This record shall also include the VOC, each individual HAP, total HAP, and solids contents of each material as determined by the Material Content requirement of this permit. 2) The VOC, each individual HAP, and total HAP emissions for the previous month using the formulas specified in this permit. 3) The 12-month rolling sum VOC, each individual HAP, and total HAP emissions for the previous 12-month period by summing the monthly VOC, each individual HAP, and total HAP emissions data for the previous 12 months.	Minn. R. 7007.0800, subp. 4 and 5
Monthly Calculation -- VOC, Individual HAP, and Total HAP Emissions. The Permittee shall calculate VOC, each individual HAP, and total HAP emissions using the following equations:  VOC/Individual HAP/Total HAP (tons/month) = V - W + R V = (A1 x B1) + (A2 x B2) + (A3 x B3) + ..... W = (C1 x D1) + (C2 x D2) + (C3 x D3) + ..... R = (E1 x F1 x G)/2000	Minn. R. 7007.0800, subp. 4 and 5
Monthly VOC, Individual HAP, and Total HAP Emissions Calculation Continued:  where: V = VOC/individual HAP/total HAP used, in tons/month; A# = amount of each VOC/HAP-containing material used, in tons/month; B# = weight percent VOC/individual HAP/total HAP in A#, as a fraction; W = VOC/individual HAP/total HAP shipped in waste, in tons/month; C# = amount of each VOC/HAP-containing waste material shipped, in tons/month. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; D# = weight percent of VOC/individual HAP/total HAP in C#, as a fraction; R = VOC/Individual HAP/total HAP emitted during repacking, in tons/month; E# = amount of each VOC/HAP-containing material repacked, in gallons/month; F# = weight percent VOC/individual HAP/total HAP in E#, in pounds/gallon; G = VOC/individual HAP/total HAP emissions factor for repacking, 5%.	Minn. R. 7007.0800, subp. 4 and 5
Material Content: VOC, each individual HAP, total HAP, and solids (PM and PM<10 microns) contents in materials shall be determined by the Material Safety Data Sheet (MSDS) 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. When using the MSDS as the basis of calculating particulate emissions, the conservative assumption is made that PM consists entirely of PM less than 10 microns. Other alternative methods approved by the MPCA may be used to determine the VOC, HAP, and solids contents. The Commissioner reserves the right to require the Permittee to determine the VOC, HAP, and solids 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.	Minn. R. 7007.0800, subp. 4 and 5
Waste Credit: If the Permittee elects to obtain credit for VOC and HAP shipped in waste materials, the Permittee shall either use item 1 or 2 to determine the content for each credited shipment. 1) The Permittee shall analyze a composite sample of each waste shipment to determine the weight content of VOC, each individual HAP, and total HAP, excluding water. 2) The Permittee may use supplier data for raw materials to determine the VOC, each individual HAP, and total HAP content of each waste shipment, using the same content data used to determine the content of raw materials. If the waste contains several materials, the content of mixed waste shall be assumed to be the lowest VOC, each individual HAP, and total HAP content of any of the materials.	Minn. R. 7007.0800, subp. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-5**

07/03/07

Facility Name: Tennant Co - Golden Valley

Permit Number: 05300143 - 003

<p>Recordkeeping of Equipment and Coating Changes:</p> <p>The Permittee shall keep records of any equipment that is replaced, modified, or added. This record shall be updated any time equipment is replaced, modified or added. The record shall include the date the equipment was replaced/modified/added (startup of new, shutdown of old), the corresponding EU number, the manufacturer and model numbers of the new equipment, the spray technology and manufacturer specified transfer efficiency, and the total spray capacity in gallons per hour.</p> <p>The Permittee shall keep a record of all coating formulations, as applied, as determined by the Material Content requirement of this permit.</p>	<p>Title I Condition: Monitoring for Limit to avoid classification as major source under 40 CFR 52.21 and Minn. R. 7007.300, 40 CFR 70.2 and Minn. R. 7007.0200, and Minn. R. 7007.0800. subp. 4 and 5</p>
<p>Recordkeeping of Particulate Potential Emissions:</p> <p>Prior to adding spray capacity, or replacing/modifying spray equipment, the Permittee shall calculate and record the maximum hourly potential particulate matter emissions for the emissions unit. The Permittee shall use the calculation methods used in the Technical Support Document for this permit (total hourly solids spray rate x overspray fraction x (1-overall controlled fraction)). The Permittee shall then calculate the appropriate Minn. R. 7011.0730 and 7011.735 limits for the booth based on the airflow and process weight. The calculated potential to emit must be under the Minn. R. limit. If not under the rule limit, the modification is not authorized by this permit.</p>	<p>Minn. R. 7007.0800, subp. 2, 4 and 5; to meet Minn. R. 7011.0730 and 7011.0735</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-6**

07/03/07

Facility Name: Tennant Co - Golden Valley

Permit Number: 05300143 - 003

**Subject Item: GP 002 Engine Fuel Limits**

**Associated Items:** EU 009 Assembly Line 1, Engine Exhaust  
 EU 010 Assembly Line 2, Engine Exhaust  
 EU 011 Assembly Line 3, Engine Exhaust  
 EU 012 P.D.L. , Engine Exhaust  
 EU 013 Engine Test Lab East  
 EU 014 Engine Test Lab DYNO  
 EU 015 Engine Test Lab West  
 EU 016 Engine Test Lab Temp Control Room  
 EU 017 Final Test, Engine Exhaust  
 EU 018 Run-In, Engine Exhaust  
 EU 019 P.D.L, Engine Exhaust  
 EU 020 Zane, Engine Exhaust  
 EU 021 Zane, Engine Exhaust  
 EU 024 Zane, Engine Exhaust

What to do	Why to do it
<b>A. LIMITS</b>	hdr
Fuel Usage: less than or equal to 20,000 gallons/year of Diesel, using a 12-month rolling sum calculated by the 15th of the month for the previous 12-month period as described later in this permit.  All diesel fuel used by emissions units in GP 002, including all emission units added to GP 002 as allowed in this permit, shall be included in this calculation.	Title I Condition: Limit to avoid classification as major source under 40 CFR Section 52.21 and Minn. R. 7007.3000, and 40 CFR Section 70.2 and Minn. R. 7007.0200
Fuel Usage: less than or equal to 20,000 gallons/year of Propane, using a 12-month rolling sum calculated by the 15th of the month for the previous 12-month period as described later in this permit.  All propane used by emissions units in GP 002, including all emission units added to GP 002 as allowed in this permit, shall be included in this calculation.	Title I Condition: Limit to avoid classification as major source under 40 CFR Section 52.21 and Minn. R. 7007.3000, and 40 CFR Section 70.2 and Minn. R. 7007.0200
Fuel Usage: less than or equal to 16,300 gallons/year of Gasoline, using a 12-month rolling sum calculated by the 15th of the month for the previous 12-month period as described later in this permit.  All gasoline fuel used by emissions units in GP 002, including all emission units added to GP 002 as allowed in this permit, shall be included in this calculation.	Title I Condition: Limit to avoid classification as major source under 40 CFR Section 52.21 and Minn. R. 7007.3000, and 40 CFR Section 70.2 and Minn. R. 7007.0200
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained. This applies separately to each internal combustion engine.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input . This applies separately to each internal combustion engine. The potential to emit based on the worst case fuel option is 0.29 lb/MMBtu.	Minn. R. 7011.2300, subp. 2
The Permittee may replace listed emission units, move emission units, modify emission units to include up to seven drops, or add up to five new emission units with up to seven drops similar to those listed in GP 002 provided all permit limits are met including the GP 002 requirements for fuel recordkeeping, monthly fuel calculations, and annual reports.	Title I Condition: Limit to avoid classification as a major source and modification under 40 CFR 52.21; and to avoid major source classification under 40 CFR 70.2 and 40 CFR 63.2
<b>B. MONITORING REQUIREMENTS</b>	hdr
Fuel Recordkeeping: The Permittee shall keep monthly records of fuel used, by fuel type, in gallons, by emissions units in GP 002 combined. The records may consist of purchase or delivery records or written usage logs.	Title I Condition: Monitoring for Limit to avoid classification as major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000, and 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Tennant Co - Golden Valley  
Permit Number: 05300143 - 003

Monthly Fuel Calculations. By the 15th of the month, the Permittee shall calculate and record the following: 1). The total gallons of diesel used by GP 002 for the previous calendar month using the fuel usage records. 2). The total gallons of propane used by GP 002 for the previous calendar month using the fuel usage records. 3). The total gallons of gasoline used by GP 002 for the previous calendar month using the fuel usage records. 4). The 12-month rolling sum usage for each of the 3 fuel types for the previous 12-month period by summing the monthly fuel usage data for the previous 12 months.	Minn. R. 7007.0800, subp. 4 and 5
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**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-8**

07/03/07

Facility Name: Tennant Co - Golden Valley

Permit Number: 05300143 - 003

**Subject Item:** GP 003 Boilers**Associated Items:** EU 001 Boiler 1

EU 002 Boiler 2

EU 003 Boiler 3

EU 004 Boiler 4

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input . This limit applies separately to each indirect heating unit. Due to equipment design, the PTE of each unit is 0.0072 lb/MMBtu.	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. This limit applies separately to each indirect heating unit.	Minn. R. 7011.0510, subp. 2
Fuel Type: natural gas and propane only, by design.	Minn. R. 7005.0100, subp. 35a
The Permittee shall keep records of fuel purchases for the boilers on a monthly basis.	Minn. R. 7007.0800, subp. 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-9**

07/03/07

Facility Name: Tennant Co - Golden Valley

Permit Number: 05300143 - 003

**Subject Item: GP 004 Paint Booth Filters****Associated Items:** CE 001 Fiberglass Filter w/o Cardboard Frame

What to do	Why to do it
A. LIMITS	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for Total Particulate Matter: greater than or equal to 74 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000, and 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for Particulate Matter < 10 micron: less than or equal to 74 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000, and 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the panel filters any time that any process equipment controlled by the panel filters is(are) in operation.	Title I Condition: Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000, and 40 CFR Section 70.2 and Minn. R. 7007.0200
B. MONITORING REQUIREMENTS	hdr
Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each panel filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections.	Title I Condition: Monitoring for Limit taken to avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 4 and 5
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5, and 14
Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5, and 14
Operation and Maintenance of Filters: The Permittee shall operate and maintain each filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this as specified in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of the certification on site, as well as an annual record of fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method.	Minn. R. 7007.0800, subp. 4, 5, and 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-10**

07/03/07

Facility Name: Tennant Co - Golden Valley

Permit Number: 05300143 - 003

**Subject Item:** GP 005 Make-Up Air Units**Associated Items:** EU 025 Make-Up Air Unit 1

EU 026 Make-Up Air Unit 2

EU 027 Make-Up Air Unit 3 (Zane)

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input . This limit applies separately to each make-up air unit. Due to equipment design, the PTE of each unit is 0.0072 lb/MMBtu.	Minn. R. 7011.0515, subp. 1
Opacity: less than or equal to 20 percent except for one six-minute period per hour of not more than 60 percent opacity. This limit applies separately to each make-up air unit.	Minn. R. 7011.0515, subp. 2
Fuel Type: natural gas only, by design	Minn. R. 7005.0100, subp.35a

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-11**

07/03/07

Facility Name: Tennant Co - Golden Valley

Permit Number: 05300143 - 003

**Subject Item:** EU 029 Powder Coat Cure Oven**Associated Items:** SV 030 Powder Coat Cure Oven Stack 1

SV 031 Powder Coat Cure Oven Stack 2

What to do	Why to do it
Total Particulate Matter: less than 0.4 lbs/million Btu heat input . Due to equipment design, the PTE of this unit is 0.0072 lb/MMBtu.	Minn. R. 7011.0515, subp. 1
Opacity: less than 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0515, subp. 2
Fuel Type: natural gas only, by design	Minn. R. 7005.0100, subp.



## TABLE B: SUBMITTALS

B-1 07/03/07

Facility Name: Tennant Co - Golden Valley

Permit Number: 05300143 - 003

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.

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

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.

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.

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

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

**TABLE B: RECURRENT SUBMITTALS****B-2** 07/03/07

Facility Name: Tennant Co - Golden Valley

Permit Number: 05300143 - 003

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 07/24/2001 . 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. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Annual Report	due 30 days after end of each calendar year starting 07/24/2001 . The Permittee shall submit an annual report by January 30th that describes the changes made at the facility during the previous calendar year using the latest MPCA application forms. The report shall document the VOC, single HAP, and total HAP 12-month rolling sum calculations and the GP 002 fuel usage 12-month rolling sum calculation for the previous calendar year and all units that were modified, replaced, or added in the previous calendar year. The report shall be submitted with the annual Compliance Certification listed in Table B. As part of the Annual Report, the Permittee shall verify and certify that the facility has maintained non-major source status for New Source Review, Part 70, and Part 63.	Total Facility
Compliance Certification	due 31 days after end of each calendar year starting 07/24/2001 (for the previous calendar year). To be submitted on a form approved by the Commissioner to the Commissioner. This report covers all deviations experienced during the calendar year.	Total Facility

**APPENDIX I**  
**Facility Name: Tennant Co.**  
**Permit Number: 05300143-003**

## Insignificant Activities and General Applicable Requirements

The table below lists the insignificant activities that are currently at the Facility and their associated general applicable requirements.

<b>Minn. R. 7007.1300, subp.</b>	<b>Rule Description of the Activity</b>	<b>General Applicable Requirement</b>
3(G)	Emissions from a laboratory, as defined in the subpart. <i>Tennant has several laboratory and testing operations that qualify under this subpart.</i>	Minn. R. 7011.0715 (PM and opacity)
3(H)(3)	Brazing, soldering or welding equipment. <i>Tennant has maintenance and manufacturing welding equipment.</i>	Minn. R. 7011.0715 (PM and opacity)
3(H)(7)	Cleaning operations: alkaline/phosphate cleaners and associated cleaners and associated burners.	Minn. R. 7011.0715 (PM and opacity)
3(I)	Individual emissions units at a stationary source, each of which have a PTE of the following pollutants in amounts less than: 2 tpy of CO and 1 tpy each of NO <sub>x</sub> , SO <sub>2</sub> , PM/PM <sub>10</sub> , VOC, and ozone. <i>Tennant has numerous combustion units that qualify under this Subpart. These units include space heaters, hot water heaters, ovens and emergency generators, laser cutters, paint mixing, and powder coat pre-washing.</i>	Minn. R. 7011.0610 (PM and opacity) or Minn. R. 7011.0715 (PM and opacity) or Minn. R. 7011.2300 (SO <sub>2</sub> and opacity)
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.	Minn. R. 7011.0710/0715
Minn. R. 7007.4110	Equipment venting PM/PM <sub>10</sub> inside a building, provided that emissions from the equipment are filtered through an air cleaning system and vented inside of the building 100% of the time. <i>Tennant has 2 sawing operations that are controlled and vent internally.</i>	Minn. R. 7011.0715 (PM and opacity)

**APPENDIX I**  
**Facility Name: Tennant Co.**  
**Permit Number: 05300143-003**

Under Minn. R. 7007.1250, subp. 1(A), the Permittee may add insignificant activities to the stationary source throughout the term of the permit without getting permit amendments. Certain exclusions apply and are listed in Minn. R. 7007.1250, subp. 2. In addition, this permit specifically prohibits the Permittee from making any modifications that would make the source major under NSR. The following table is a listing of the insignificant activities that the Permittee is somewhat likely to add and their associated applicable requirements.

<b>Minn. R. 7007.1300, subp.</b>	<b>Rule Description of the Activity</b>	<b>General Applicable Requirement(s)</b>
3(B)(1)	Infrared electric ovens	Minn. R. 7011.0110 (opacity)
3(H)	Blueprint copiers and photographic processes;	Minn. R. 7011.0110 (opacity)

**APPENDIX II**  
**Facility Name: Tennant Co.**  
**Permit Number: 05300143-002**

**Emissions Units Description from Delta**  
*paper copy only*

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 05300143-003**

This technical support document is intended for all parties interested in the draft 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 draft permit.

**1. General Information**

**1.1 Applicant and Stationary Source Location:**

Applicant/Address	Stationary Source/Address (SIC Code: <b>3589</b> )
Tennant Company 701 Lilac Dr N Golden Valley 55422-4611	701 Lilac Dr N Golden Valley Hennepin County 55422-4611
Contact: Charlie Brandenburg	Phone: (763) 513-1837

**1.2 Description of the Facility**

Tennant Company manufactures industrial floor maintenance equipment at its plant in Golden Valley, Minnesota. The floor maintenance units are self propelled and consist of either walk behind units or riding units. Manufacturing of the maintenance equipment consists of cutting, forming, welding, and surface coating either stainless or milled steel. After the components are manufactured they are assembled and finally tested before shipment.

The primary sources of air emissions from the manufacturing process are from surface coating and engine testing. Surface coating mainly consists of powder coating which is a source of particulate emissions. One manual spray booth is maintained to perform touchups and limited run items as needed. Engine testing occurs at various points in the plant. Ventilation drops capture the emissions from engine testing and exhausts it to the atmosphere. Manufacturing activities which includes welding and laser cutting are considered insignificant activities under Minnesota Rules.

**1.3 Description of All Amendments Issued**

Permit Number and Issuance Date	Action Authorized
05300143-002 May 9, 2005	Amended existing permit conditions to avoid classification as a major source under Part 70 and Part 63. In addition this permit action authorized the addition of a powder coating system and additional engine testing areas.

**1.4 Description of the Activities Allowed by this Permit Action**

Tennant Company currently operates under a State Operating Permit as a synthetic minor PSD source and synthetic minor Part 70 source. This expedited permitting action authorizes the addition of seven laser cutters, additional welding equipment, removal of spray booths, and modification of a Title 1 limit on the emissions of hazardous air pollutants (HAPs). Because this permit action modifies an existing Title 1 limit it is considered a major permit amendment.

Specifically the actions authorized by this permit are as follows:

- Add seven (7) laser cutters. Emissions from the operation of the laser cutters will be captured with hoods which are vented to a baghouse for emission control. Because uncontrolled emissions from the laser cutters are less than one ton per year for all pollutants they are classified as an insignificant activity but required to be listed under Minnesota Rule 7007.1300 Subpart 3(I). The laser cutter emission calculations are attached as Attachment 1.
- Add additional welding equipment. Similar to existing welding equipment at the facility, the additional welding equipment is classified as an insignificant activity but required to be listed under Minnesota Rule 7007.1300 Subpart 3(H)(3).
- Remove spray booths EU 006 and EU 007. Lower VOC allowable emissions from 80 tons per year (tpy) to 40 tons per year. Lower limit set on HAPs emissions from coating operations from 8 to 4 tpy for a single HAP and from 23 to 12 for cumulative HAPs to allow for the installation of the laser cutters while maintaining the minor source classification under 40 CFR § 63.

The permit application for this permitting action was received by the Minnesota Pollution Control Agency (MPCA) on February 1, 2007.

### 1.5 Facility Emissions:

**Table 1. Total Facility Potential to Emit Summary<sup>1</sup>**

	<b>PM tpy</b>	<b>PM<sub>10</sub> tpy</b>	<b>SO<sub>2</sub> tpy</b>	<b>NO<sub>x</sub> tpy</b>	<b>CO tpy</b>	<b>VOC tpy</b>	<b>Single HAP<sup>2</sup> tpy</b>	<b>All HAPs tpy</b>
Total Facility Limited Potential Emissions Pre- Modification	19.9	19.9	3.7	57.0	94.1	86.8	9.0	24.0
Total Facility Limited Potential Emissions Post- Modification	17.6	17.6	3.7	57.0	94.1	46.8	5	16.5
Total Facility Actual Emissions (2005)	1.06	1.06	.20	11.5	29.61	4.90	HAPs not reported in emission inventory	

<sup>1</sup>Potential emissions includes insignificant activities.

<sup>2</sup>Highest potential single HAP, may be xylene, ethyl benzene, toluene, glycol ethers, or methyl ethyl ketone, all from the coating booth. There will be no emissions of these HAPs from the laser cutters.

**Table 2. Facility Classification**

Classification	Major/Affected Source	Synthetic Minor*	Minor
PSD		VOC, PM/PM10, CO, and NOx	SO2
Part 70 Permit Program		VOC, NOx, PM10, CO, and HAPs	SO2
Part 63 NESHAP		X	

\*Refers to PTE less than those specified as major by 40 CFR 52.21, 40 CFR pt. 70, and 40 CFR pt. 63

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

### New Source Review

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

### Part 70 Permit Program

The facility is an existing synthetic minor source under the Part 70 permit program.

### New Source Performance Standards (NSPS)

There are no New Source Performance Standards applicable to the operations at this facility.

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

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

### Minnesota State Rules

Portions of the facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0510 Standards of Performance for Existing Indirect Heating Equipment
- Minn. R. 7011.0710 Standards of Performance for Pre-1969 Industrial Process Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment
- Minn. R. 7011.2300 Standards of Performance for Stationary Internal Combustion Engines



**Table 3. Regulatory Overview of Units Affected by the Modification/Permit Amendment**

EU, GP, or SV	Applicable Regulations	Comments:
GP 001	Title I limit to avoid NESHAPs	Remove spray booths EU 006 and EU 007. Lower VOC allowable emissions from 80 tons per year (tpy) to 40 tons per year. Lower limit set on HAPs emissions from coating operations from 8 to 4 tpy for a single HAP and from 23 to 12 for cumulative HAPs to allow for the installation of the laser cutters while maintaining the minor source classification under 40 CFR § 63.
GP004 (panel filters)		Remove CE 002 and CE 003 because emission units they served have been decommissioned.
Appendix I, Insignificant Activities and General Applicable Requirements.	7007.1300 subp. 3 (H) and (I)	Individual emission units at a stationary source, each of which have a potential to emit the following pollutants in amounts less than: (1) 4,000 pounds per year of CO; and (2) 2,000 pounds per year each of NO <sub>x</sub> , SO <sub>2</sub> , PM, PM <sub>10</sub> , VOCs (including HAP containing VOCs, and ozone). Tennant will be installing seven (7) laser cutters that meet these criteria as part of this permit action. Tennant will be installing additional welding equipment that meet these criteria as part of this permit action.

### **3. Technical Information**

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

Attachment 1 to this TSD contains the calculations from the laser cutters as well as the emission summary for the entire facility. Attachment 2 contains the reference material cited for calculating emissions from laser cutting.

#### **3.2 Insignificant Activities**

The seven (7) laser cutters and additional welding equipment to be installed are classified as insignificant activities under Minnesota Rule 7007.1300 Subpart 3. These insignificant activities are required to be listed in the permit application and calculations provided under certain circumstances. Since a revised HAP limit is being taken to allow for the installation of the laser cutters in order to maintain the facility's status as a minor source per Subpart 63 emission calculations from laser cutting have been provided and are included as Attachment 1. Emission calculations from the additional welding activities are not required.

Calculating potential emissions from laser cutting is dependent on the following variables:

- Metal type
- Metal thickness, inches
- Laser beam width, inches
- Laser cutting rate, inches per minute
- Metal density, pound per cubic inch

Emissions from the fumes from material cutting were assigned a value of 10.5% (7% with a safety factor of 1.5) of the total material cut. The value of 7% was obtained from "Emission of Fume, Nitrogen Oxides

and Noise in Plasma Cutting of Stainless and Mild Steel,” by Bromsen B et. Al, Swedish Institute of Production Engineering Research, Goteborg, Sweden, 1994. This document is included as Attachment 2. In laser cutting, gaseous emissions such as NO<sub>x</sub> are negligible to nonexistent. The emissions from laser cutting will be particulate from the metal material being removed. As described above, to add conservatism to the emission calculation a safety factor of 1.5 was applied.

The metal type processed by the laser cutters will be either stainless steel or mild still. Since stainless steel may contain a greater percentage of HAPS (as taken by the material safety data sheet), cutting 100% stainless steel is taken to be the worst-case scenario. Potential emissions from laser cutting were calculated assuming 8,760 hours of operation per year. Detailed emission calculations for the laser cutters are included as Attachment 1. Uncontrolled emissions from laser cutter will be below 2,000 pounds per year for each pollutant which classifies each unit as an insignificant activity under Minnesota Rule 7007.1300 Subpart 3(I).

**Table 4. Insignificant Activities**

<b>Insignificant Activity</b>	<b>General Applicable Emission limit</b>	<b>Discussion</b>
Brazing, soldering or welding equipment	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0715)	For these units, based on EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, these units are typically operated and vented inside a building, so testing for PM or opacity is not feasible.
Individual units with potential to emit the following pollutants in amounts less than: (1) 4,000 pounds per year of CO; and (2) 2,000 pounds per year each of NO <sub>x</sub> , SO <sub>2</sub> , PM, PM <sub>10</sub> , VOC (including hazardous air pollutant-containing VOC), and ozone.	PM, variable depending on airflow Opacity ≤ 20% (with exceptions) (Minn. R. 7011.0715)	Exhaust from the seven laser cutters will be routed to a fabric filter for control of particulate. It is highly unlikely that they could violate the applicable requirement. In addition, even without control the PM emissions are considered insignificant.

### **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 5 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

**Table 5. Periodic Monitoring**

<b>Emission Unit or Group</b>	<b>Requirement (basis)</b>	<b>Additional Monitoring</b>	<b>Discussion</b>
VOC usage limits: GP 001	VOC $\leq$ 40 tons per year (limit to avoid major source under NSR)	Recordkeeping: Daily records of VOC and HAP containing coating and cleaning solvent containers opened.	Daily records and emission calculations performed monthly. Credit can be taken for waste materials collected and shipped off-site (dispensed - waste = emissions). Since this is done at most monthly, calculating emissions more frequently than monthly would result in large spikes (while waste is accumulating) and dips (when waste is shipped) – resulting in possible paperwork violations and days with negative emissions. For these reasons, 12 month rolling limits are reasonable for this Facility.
	PM/PM10: The coating booth is required to be controlled by panel filters in GP 004 (limits to avoid NSR + meet Minn. R. 7011.075)	See GP 004 for monitoring	
	Gun transfer efficiency limit of 40%	Recordkeeping of guns and transfer efficiency	This limit is needed in order for the PTE calculations to be less than allowed by the Minnesota Industrial Process Equipment Rule. Calculations are conservative (assume maximum solids sprayed for a full hour), so recordkeeping is adequate to ensure the limit is met.
	HAP Limit: Individual $\leq$ 4.0 tons per year; Total $\leq$ 12.0 tons per year. (limit to avoid source under 40 CFR Section 70, Minn. R. 7007.020, 40 CFR Section 63.2, and Minn. R. 7011.7000)	Recordkeeping and emissions calculations	HAP limits are required in order for facility to avoid major source classification under said rules. Calculations are to be performed monthly for the previous 12-month period.

### **3.2 Permit Organization**

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements.

### **3.3 Comments Received**

Public Notice Period: May 31, 2007 – June 30, 2007

Comments were not received from the public during the public notice period.

### **4. Conclusion**

Based on the information provided by Tennant Company, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 05300143-003 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team:      Trevor Shearen (Project Manager)  
Chris Buntjer (permit writer/engineer)  
Ann Curnow (MPCA contractor/permit writer)  
Christian Norman (enforcement)  
Curt Stock (stack testing)  
Peggy Bartz (peer reviewer)

AQ File No. 2210A; DQ 1371, 05300143

Attachments:    1. PTE Summary and Laser Cutter Calculation Spreadsheets  
                      2. Reference for laser cutter emissions