217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Caterpillar Inc.
Attn: Kevin Bennett
2200 Channahon Road
Joliet, Illinois 60436

Application No.: 00120066
Applicant's Designation:
Subject: “B” Paint System
Date Issued: March 2, 2001
Location: 2200 Channahon Road, Joliet

I.D. No.: 197809AAC
Date Received: December 28, 2000

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of the “B” Paint System as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.0 Unit Specific Conditions

1.1 Unit “B” Paint System
Control Filters

1.1.1 Description

The new paint booth, designated as “B” Paint Booth, replaces some existing painting operations, and is comprised of three existing booths relocated from the Cab Paint System. The “B” Paint Booth will paint hydraulic components using Urethane paint. In addition to the new booth, Caterpillar is proposing to add a new conveyor system, a gas fired washer, a gas fired infrared booster oven, along with a small touchup paint booth. Caterpillar will also be installing heated air makeup systems to feed the booth. One of the Cab Paint System gas fired drying ovens will be relocated to help cure the coatings.

1.1.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
“B” Paint System	“B” High Efficiency Paint Booth and Ancillary	Filters

	Equipment	

1.1.3 Applicability Provisions and Applicable Regulations

a. The “affected paint system” for the purpose of these unit-specific conditions, is a paint system as described in Conditions 1.1.2 and 1.1.3.

b. The affected paint system is subject to 35 IAC Part 218, Subpart F, Coating Operations: Pursuant to 35 IAC 218.204, the Permittee shall not apply at any time any coating in which the VOM content exceeds the following emission limitations for the specified coating. The following emission limitations are expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied at each coating applicator. Compounds that are specifically exempted from the definition of VOM should be treated as water for the purpose of calculating the "less water" part of the coating composition. The emission limitations are as follows:

i. Heavy Off-Highway Vehicle Products Coating/Extreme Performance Prime Coat [35 IAC 218.204(k)(1)]:

kg/l	lb/gal
0.42	3.5

ii. Heavy Off-Highway Vehicle Products Coating/Extreme Performance Topcoat (Air Dried) [35 IAC 218.204(k)(2)]:

kg/l	lb/gal
0.42	3.5

iii. Heavy Off-Highway Vehicle Products Coating/Final Repair Coat (Air Dried) [35 IAC 218.204(k)(3)]:

kg/l	lb/gal
0.42	3.5

c. The affected paint system is subject to 35 IAC 212.321(a), which provides that the Permittee shall not cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].

d. The Permittee shall not cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm [35 IAC 214.301].

1.1.4 Non-Applicability of Regulations of Concern

a. The affected paint system is not subject 35 IAC 218.204(k)(4) Heavy Off-Highway Vehicle Product/All Other Coatings, and 35 IAC 218.204(j)(2)(B), Miscellaneous Metal Parts and Products Extreme/Performance Baked Coating, pursuant to 35 IAC 211.670 as the coatings are not cured or dried in an oven where the oven air temperature exceeds 90°C (194°F) or is cured in any manner that does not otherwise fit into the definition of "air dried coatings," as defined in 35 IAC 211.330.

b. The Permittee is not required to meet the limitations of 35 IAC 218.301 or 218.302, Use of Organic Material, after the date by which the coating line is required to meet 35 IAC 218.204 [35 IAC 218.209].

c. This permit is issued based on the affected paint system not being a major source of hazardous air pollutants, so that it is not subject to a case-by-case determination of Maximum Achievable Control Technology (MACT), pursuant to Section 112(g) of the Clean Air Act.

1.1.5 Control Requirements and Operational Requirements

a. The Permittee shall follow good operating practices for the paint booth filters, including periodic inspection, routine maintenance and prompt repair of defects.

b. The curing and drying ovens associated with the affected paint system shall only be operated with natural gas as the fuel.

1.1.6 Emission Limitations

a. i. Emissions from the affected paint system shall not exceed the following limits:

VOM Emissions	
(Tons/Month)	(Ton/Year)
3.4	33.5

These limits are based on the compliance procedures specified in Condition 1.1.12.

ii. The emissions of hazardous air pollutants (HAP) as listed in Section 112(b) of the Clean Air Act from the affected paint system shall not exceed the following limits:

Individual HAP Emissions (Tons/Month)	(Ton/Year)
1.0	9.9

Combination of HAP Emissions (Tons/Month)	(Ton/Year)
2.5	24.9

These limits are based on the compliance procedures specified in Condition 1.1.12.

iii. Emissions from the air makeup units and ovens associated with the combustion of natural gas shall not exceed the following limits:

Pollutant	Emissions (Tons/Month)	(Tons/Yr)
NO_x	1.3	12.3
CO	1.1	10.3
VOM	0.1	0.7
PM	0.1	1.0
SO_2	0.1	0.1

These limits are based on the maximum firing rate of the air makeup units and ovens and the maximum hours of operation (8,760 hours/year).

b. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

c. The source has addressed the applicability and compliance of 35 IAC Part 203, Major Stationary Sources Construction and Modification (See Attachment 1). These limits continue to ensure that the construction and/or modification addressed in this construction permit does not constitute a major modification pursuant to these rules.

1.1.7 Testing Requirements

a. The VOM content of each coating shall be determined by the applicable test methods and procedures specified in 35 IAC 218.105 to establish the records required under Condition 1.1.9(b) (see also 35 IAC 218.211) [35 IAC 218.211(a)].

b. Upon reasonable request by the Illinois EPA, the VOM content of specific coatings and cleaning solvents used on the affected paint system shall be determined as follows:

i. The VOM content of representative coatings "as applied" on the affected paint system shall be determined according to USEPA Reference Method 24 of 40 CFR 60 Appendix A and the procedures of 35 IAC 218.105(a).

ii. This testing may be performed by the supplier of a material provided that the supplier provides appropriate documentation for such testing to the Permittee and the Permittee's records pursuant to Condition 1.1.9(b) directly reflect the application of such material and separately account for any additions of solvent.

1.1.8 Monitoring Requirements

None

1.1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected paint system to demonstrate compliance with Conditions 1.1.3 and 1.1.6:

a. Records of the testing of VOM content of coatings and cleaning solvents pursuant to Condition 1.1.7, which include the following:

i. Identification of material tested;

ii. Results of analysis;

iii. Documentation of analysis methodology; and

iv. Person performing analysis.

b. Pursuant to 35 IAC 218.211(c)(2), the Permittee shall collect and record all of the following information each day for the affected paint system and maintain the information at the source for a period of three years:

i. The name and identification number of each coating as applied on the affected paint system; and

ii. The weight of VOM per volume of each coating

(minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on the affected paint system.

c. Records addressing use of good operating practices for the paint booth filters:

i. Records for periodic inspection of the paint booth filters with date, individual performing the inspection, and nature of inspection; and

ii. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.

d. Records of the coating usage for the affected paint system, gal/mo and gal/yr;

e. The VOM and HAP content of coatings, % by Wt;

f. Density of coatings, lb/gal;

g. Records of the solvent usage for the affected paint system, gal/mo and gal/yr;

h. Density of solvent, lb/gal;

i. HAP content of the solvent, % by Wt;

j. The monthly and aggregate VOM and HAP emissions from the affected paint system based on the material usage, with supporting calculations.

1.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance of an affected paint system with the permit requirements as follows. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

a. Pursuant to 35 IAC 218.211(c)(3)(A), the Permittee shall notify the Illinois EPA of any record showing violation of Condition 1.1.3(b) (see also 35 IAC 218.204) within 30 days following the occurrence of the violation.

b. Continued operation of the affected paint system with a defect in the paint booth filters that may result in emissions of particulate matter in excess of limits in Condition 1.1.3(c) within 30 days of such an occurrence.

c. Emissions of VOM or HAP in excess of the limits in

Condition 1.1.6(a) within 30 days of such an occurrence.

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to the affected paint system without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Change in the raw materials used, provided the affected paint system continues to comply with the conditions of this permit.

1.1.12 Compliance Procedures

Compliance with the emission limits shall be based on the recordkeeping requirements in Condition 1.1.9 and the emission factors and formulas listed below:

a. Compliance with Condition 1.1.3(c) is assumed to be achieved by proper operation of the paint booth filters, as addressed by Condition 1.1.5(a).

b. Compliance with Condition 1.1.3(d) is assumed by the work-practices inherent in operation of natural gas-fired curing and drying ovens.

c. To determine compliance with Condition 1.1.6, VOM and HAP emissions from the affected paint system shall be calculated based on the following:

i. Volatile Organic Material Emissions:

VOM (lb) = (Coating Usage, gal) x (Coating Density, lb/gal) x (VOM Content of Coating, % by Wt.) + (Cleaning Solvent Usage, gal) x (Solvent Density, lb/gal)

ii. HAP Emissions:

HAP (lb) = (Coating Usage, gal) x (Coating Density, lb/gal) x (HAP Content of Coating, % by Wt.) + (Cleaning Solvent Usage, gal) x (Solvent Density, lb/gal) x (HAP Content of Solvent, % by Wt.)

2. The affected paint system may be operated for a period of 180 days under this construction permit.

3. MJ 5841 “C” Booth, MJ 6501 “Scraper” Booth, and the Cab Paint System must be shutdown prior to operation of the affected paint system.

“Please note that the Permittee should seek to amend their CAAPP permit to include the construction and/or modification covered under this permit through the administrative amendment process by submitting an application that includes the information contained in form 273-CAAPP. This application must also identify and address any changes from the associated construction permit application. Note that information previously submitted in the construction permit application may be incorporated by reference into the application to amend the CAAPP permit. The Permittee must also provide updated information on fees as contained in form 292-CAAPP, “Fee Determination for CAAPP Permit.”

If you have any questions on this, please call Jason Schnepp at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:JMS:psj

cc: Region 1

Attachment 1

Nonattainment NSR Applicability

Contemporaneous Time Period of 1997 Through 2001

Table I – Emissions Increases Associated With The Proposed Modification

Item of Equipment	Proposed Commencement of Operation Date	VOM Emissions Increase (Tons/Year)	Permit Number
"B" Paint System	2001	33.5	00120066
Combustion Units	2001	0.7	00120066
		34.2	

Table II – Source-Wide Creditable Contemporaneous Emission Increases

Item of Equipment	Commencement of Operation Date	VOM Emissions Increase (Tons/Year)	Permit Number
None			

Table III – Source-Wide Creditable Contemporaneous Emission Decreases

Item of Equipment	Commencement of Operational Change Date	VOM Emissions Decrease (Tons/Year)	Permit Number
MJ 5841 "C" Booth[a]	2001	7.4	95120095
MJ 6501 "Scraper" Booth[a]	2001	6.5	95120095
Cab Paint System[a]	2001	7.6	95120095
		21.5	

Table IV – Net Emissions Change

	(Tons/Year)
Increases Associated With The Proposed Modification	34.2
Creditable Contemporaneous Emission Increases	0.0
Creditable Contemporaneous Emission Decreases	-21.5
	12.7

[a] This decrease is based on the shutdown of three paint systems. The emission decrease was calculated using the previous two year period preceding the shutdown (calendar years 1999 and 2000).

JMS:psj