Air Pollution Control Permit Number: RCP-C01

AIR POLLUTION CONTROL
TYPE C
REGISTRATION CONSTRUCTION PERMIT
(RCP)
FOR PRINTING FACILITIES

In compliance with the provisions of Chapter 285, Wis. Stats., and Chapters NR 400 to NR 499, Wis. Adm. Code, the permittee granted coverage under this permit is authorized to construct, reconstruct, replace, or modify and operate a direct stationary source in conformity with the conditions herein.

This authorization requires compliance by the permit holder with the emission limitations, monitoring requirements and other terms and conditions set forth in this permit.

Dated at Madison, Wisconsin, 04/20/2007

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary

By /s/
Jeffrey C. Hanson
Permits and Stationary Source Modeling Section Chief

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Important Terms or Information for this Permit

(Terms are bolded where used in the permit.)

Annual maximum controlled emissions of particulate matter are the maximum emissions of particulate matter from any heatset web offset press, after controls, and from fuel combustion units (such as dryers, furnaces, etc.) at maximum capacity, unless the unit has been determined to have insignificant emissions (refer to the list in Attachment 3).

Digital Printing (direct-to-media printing) is the transfer of electronic data directly from the computer to a stand alone electronically driven output device that prints the data directly on the selected media (substrate).

Facility-wide annual actual emissions are the total emissions generated by all emission units (except insignificant emission units) at the facility over the calendar year taking into account any reductions made by a control device or technique. When considering reductions made by a control device, the control devices and control device efficiencies listed in this permit are considered to be the minimum efficiencies required in order to use this permit.

Flexographic printing means the application of words, designs or pictures to a substrate by means of a roll printing technique in which the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other elastomeric materials.

Hazardous air pollutants (HAPs) are pollutants other than the criteria pollutants which are regulated by s. 112(b) of the Clean Air Act or ch. NR 445, Wis. Adm. Code.

Heatset web offset press means a lithographic web printing press process where solvents from the printing inks are evaporated by heat from a dryer.

Insignificant emissions units or activities are those listed in Attachment 3 of this permit. Emissions of air pollutants from insignificant emission units or activities do not need to be included when calculating the facility-wide actual annual emissions.

Non-heatset means a lithographic printing process where the printing inks are set without the application of heat. Ultraviolet-cured and electron beam-cured inks and coatings and infra-red heating units are considered non-heatset.

Photochemically reactive organic compounds are any of the following:

Group A: Hydrocarbons, alcohols, aldehydes, esters, ethers or ketones, which have olefinic or cyclo-olefinic type unsaturation.

Group B: Aromatic compounds with 8 or more carbon atoms to the molecule, except ethylbenzene.

Group C: Ethylbenzene, toluene or ketones having branched hydrocarbon structures.

Group D: A solvent or mixture of organic compounds in which any of the following conditions are met: 1. More than 20% of the total volume is composed of any combination of compounds listed in group A, B, or C above. 2. More than 5% of the total volume is composed of any combination of the compounds listed in group A above. 3. More than 8% of the total volume is composed of any combination of the compounds listed in group B above.

Process line means one or more actions or unit operations which must function simultaneously or in sequence to manufacture or modify a product. For example, a press and its associated on-machine and off-machine cleaning operations is considered to be a process line.

Restricted Alcohol means an alcohol which contains only one hydroxyl (-OH) group and less than 5 carbon atoms.

Rotogravure printing means the application of words, designs or pictures to a substrate by means of a roll printing technique which involves an intaglio or recessed image areas in the form of cells.

Screen printing means a process in which ink or coating is passed through a taut screen mesh or fabric, to which a refined form of stencil has been applied, onto a substrate. The stencil openings determine the form and dimensions of the imprint made on the substrate.

Screen printing unit means a printing application station and its associated flashoff area, ovens or dryers, conveyors or other equipment operating as part of the screen printing process. Screen reclamation is considered to be part of the screen printing process.

Screen reclamation means the removal of the stencil or of residual ink or coating from the screen mesh or fabric with solvent-based materials after excess ink or coating has first been removed manually from the screen or fabric.

Sheet-fed means a lithographic printing process where individual sheets of substrate are fed to the press sequentially and includes inking, dampening, and coating application units.

Total heat input capacity is the sum of maximum heat input capacity (in MMBTU/hr) of all fuel burning units at the facility.

Web-fed printing means a lithographic printing process where a continuous roll of substrate is fed to the press and includes inking, dampening, and coating application units.

A. EMISSION LIMITATIONS

All facilities covered by this permit shall meet the following emission limitations:

1. <u>Facility-Wide Annual Actual Emissions</u> <u>Limits:</u>

a. Annual actual emissions of particulate matter, VOCs, nitrogen oxides, sulfur dioxide, and carbon monoxide from the facility may not exceed 25% of any major source threshold defined in s. NR 407.02(4), Wis. Adm. Code, on a calendar year basis.

b. Annual actual emissions of lead from the facility may not exceed 0.5 tons per year on a calendar year basis.

c. Annual actual emissions of federally regulated hazardous air pollutants listed in s. 112(b), Clean Air Act, except lead, from the facility may not exceed 50% of any major source threshold defined in s. NR 407.02(4), Wis. Adm. Code, on a calendar year basis.

See the note and Table 1 below for the **annual facility-wide actual emissions** limits in tons per year calculated based on 25% or 50% of the major source thresholds, as applicable. [s. 285.65(7) and (14), Wis. Stats., and s. NR 406.17(2)(b), Wis. Adm. Code]

Note: Major source thresholds for criteria pollutants vary according to the attainment status of the area in which the facility is located. Therefore, the annual actual facility-wide emission limits will also change if the major source threshold for that pollutant changes. Table 1 is for informational purposes only. These thresholds were current as of March 1, 2007.

Table 1

Pollutant	Emission Limits
Particulate Matter Emissions	• 25 ton/year for particulate matter attainment areas • 17.5 ton/year for serious PM_{10} nonattainment areas
Volatile Organic Compounds (VOCs), Nitrogen Oxides (each)	• 25 ton/year for ozone attainment and basic, marginal or moderate ozone nonattainment areas • 12.5 ton/year for serious ozone nonattainment or areas within ozone transport regions except for any severe or extreme nonattainment area for ozone • 6.25 ton/year for severe ozone nonattainment areas • 2.5 ton/year for extreme ozone nonattainment areas
Sulfur Dioxide	• 25 ton/year
Carbon Monoxide	• 25 ton/year for attainment and moderate carbon monoxide nonattainment areas
Lead	• 0.5 tons/year
Section 112(b) **Hazardous Air Pollutants (HAPs)**	• 5.0 ton/year for any *single* pollutant • 12.5 ton/year for a *combination* of all pollutants

2. <u>Other Applicable Requirements:</u>

The owner or operator shall comply with all applicable air pollution control requirements in ch. 285, Wis. Stats., and chs. NR 400 to NR 499, Wis. Adm. Code, and all applicable federal air pollution control requirements in the Clean Air Act (42 USC 7401 to 7671q) and 40 CFR parts 50 to 97. [s. 285.65(3) and (13),Wis. Stats.]

A. EMISSION LIMITATIONS

3. Equipment Restrictions

a. Combustion units used at a facility covered by this permit may burn only natural gas, propane, or distillate fuel oil containing 0.05% sulfur by weight or less.

b. A facility covered by this permit may emit particulate matter only from emission units listed in Attachment 3, heatset web offset presses, and combustion units. [s. 285.65(7), Wis. Stats.]

4. Organic Compound Limitations for Process Lines:

For any **process line** that emits more than 15 pounds per day of organic compounds , the owner or operator shall meet the requirements of s. NR 424.03(2) or (3), Wis. Adm. Code, by meeting a., b. or c. below. Follow the conditions for each process line in a., b., or c., as you specified in Attachment 1 of your application[1] for this permit, and obtain Department approval prior to switching options, in the event of a change at the facility.

a. Apply latest available control techniques and operating practices demonstrating best current technology (LACT) for the **process line**. The LACT shall be followed at all times the **process line** is operating**.**

i. For each **process line** on which construction or modification last commenced prior to August 1, 1979, and electing to meet LACT, the owner or operator shall limit emissions of **photochemically reactive organic compounds** to less than 10 tons per calendar year.

ii. For each **process line** on which construction or modification commenced on or after August 1, 1979, and electing to meet LACT, the owner or operator shall limit emissions of **volatile organic compounds** to less than 10 tons per calendar year[2]. [ss. NR 406.17(1)(c), Wis. Adm. Code, and 285.65(7), Wis. Stats.]

OR

b. If a printing **process line** meets the specific applicability[3] requirements in any section from ss. NR 422.14 to 422.145, Wis. Adm. Code, but is not subject to that section based on an exemption in s. NR 422.03, Wis. Adm. Code, the owner or operator may elect to meet the emission limitations in ss. NR 422.14 to 422.145 for the **process line**. See the table following 4.c. for a summary of these requirements. [ss. NR 406.17(1)(c) and NR 424.03(2) and (3), Wis. Adm. Code.]

OR, if you cannot meet one of the above you must meet this requirement:

c. Apply 85% control as applicable in (1) or (2) below:

(1) For a **process line** constructed or last modified before August 1, 1979, control **photochemically reactive organic compound** emissions from the **process line** by at least 85%.

(2) For a **process line** constructed or last modified on or after August 1, 1979, control **volatile organic compound** emissions from the **process line** by at least 85%. [s. NR 424.03(2), Wis. Adm. Code.]

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[1] By approving coverage of a printing facility under this permit, the Department has approved their election of which organic compound limit shall be met by each process line.

[2] These limits are necessary to ensure that 85% control is technologically infeasible allowing the option to comply with LACT. These emission caps apply only to the process line and do not excuse the facility from having to meet the facility-wide VOC limits in condition A.1.

[3] Geographic location or emission rates are not considered in determining if a process line meets the specific applicability requirements. The intention is to allow facilities that are in the same industrial group as those for which the section was written to use the conditions in that section.

A. EMISSION LIMITATIONS

The following requirements apply to process lines for which the owner or operator opted to meet RACT under condition A.4.b. RACT requirements are specific to each type of printing press as follows: [ss. NR 422.14(2) and (3), 422.142(2), 422.145(2), Wis. Adm. Code]

Material	Non-heatset Offset Lithographic printing	Heatset Web Offset Lithographic printing
Printing Ink	Not applicable	≥ 90% destruction of VOCs, or outlet concentration of ≤ 20 ppmv as Carbon.
Fountain Solution	Webfed presses: ≤ 5% VOC by weight and no restricted alcohol ≤ 13.5% VOC by weight if printing on metal or plastic and refrigerated Sheetfed Presses: ≤ 5% VOC by weight ≤ 8.5% VOC by weight if refrigerated ≤ 13.5% VOC by weight if printing on metal or plastic, contains restricted alcohol and refrigerated	≤ 1.6% VOC by weight if not refrigerated ≤ 3% VOC by weight if refrigerated ≤ 5% VOC by weight and no restricted alcohol ≤ 13.5% VOC by weight if printing on metal or plastic, contains restricted alcohol and refrigerated
Blanket or roller wash	≤ 30% VOC by weight Or ≤ 10 mm Hg vapor pressure at 68 °F.	≤ 30% VOC by weight or ≤ 10 mmHg vapor pressure at 68°F.
Material	**Rotogravure, flexographic printing**	**Screen printing**
Printing Ink	(1) Volatiles in ink ≤25% VOC by volume and ≥75% or more of water by volume; OR (2) ink, minus water, ≥ 60% nonvolatile material by volume; OR (3) ≥ 90% reduction of VOCs via (a) vapor recovery system that reduces VOCs from capture system by ≥90% by weight, (b) incineration or catalytic oxidation system that oxidizes ≥90% by weight of VOCs, as combustible carbon, that enter the oxidation unit, (c) an alternate system with demonstrated reduction efficiency ≥90% by weight (only Biofilters are currently approved by the Department and EPA); AND (4) overall control VOCs by weight, ≥ 75% for publication rotogravure, ≥ 65% for packaging rotogravure, or ≥ 60% for flexographic.	≤ 400 g VOC/l (3.3 lbs VOC/gal)
Special Purpose Inks and Coatings	Not applicable	≤800 g VOC/l (6.7 lbs VOC/gal)
Roll Coating	Not Applicable	≤800 g VOC/l (6.7 lbs VOC/gal)

A. EMISSION LIMITATIONS

Other Coatings	Not Applicable	≤ 400 g VOC/l (3.3 lbs VOC/gal)
Screen reclamation activity	Not applicable	≤ 0.24 kilograms VOC per square meter of screen reclaimed, daily average (0.050 pounds VOC per square foot)

5. No person may cause, allow or permit organic compounds to be used or handled without using good operating practices and taking reasonable precautions to prevent the spillage, escape or emission of organic compounds, solvents or mixtures. Such precautions for printing facilities shall include, but are not limited to:

a . Keep shop towels soiled with inks and clean-up solutions in closed containers when not in use.

b. Cover fountain solution mixing and storage tanks except when adding or draining solution.

c. All VOC-containing materials and waste must be in closed containers except when dispensing or filling.

[s. NR 419.03(2), Wis. Adm. Code]

Visible Emission Requirements apply to all stacks venting emissions from heatset presses that are uncontrolled and combustion units that fire distillate fuel oil.

6. Visible Emissions

No owner or operator may cause or allow visible emissions from emissions units as follows:

a. If unit was constructed or last modified on or before April 1, 1972, no greater than 40% opacity, and

b. If unit was constructed or last modified after April 1, 1972, no greater than 20% opacity.

[s. NR 431.04 and 431.05, Wis. Adm. Code]

B. STACK AND MODELING REQUIREMENTS

Only facilities with heatset web offset presses or facilities combusting distillate fuel oil need to meet the requirements in Section B of this permit.

1. Stack Requirements

The following requirements apply to stacks exhausting emissions from heatset web offset printing presses and and distillate fuel oil fired combustion units. These requirements do not apply to stacks serving any insignificant emission units listed in Attachment 3[4].:

a. Stack vented emissions shall be exhausted from unobstructed discharge points that are within 10 degrees of vertical. [s. NR 406.17(3)(a), Wis. Adm. Code.]

and

b. Stacks shall be taller than all buildings (including the building to which the stack is connected) located within a distance equal to 5 times the height of the building to which the stack is connected. [s. NR 406.17(3)(c), Wis. Adm. Code.]

[4] These requirements only apply explicitly to stacks venting emissions from heatset presses and combustion units. It should be noted however, that facilities demonstrating compliance with the requirements of ch. NR 445, Wis. Adm.

B. STACK AND MODELING REQUIREMENTS

2. Alternative to Stack Requirements:

In lieu of meeting the requirements of B.1., the owner or operator may instead demonstrate through air dispersion modeling that emissions from all stacks venting heatset web offset printing presses and stacks exhausting emissions from combustion units that use distillate fuel oil, do not and will not cause or exacerbate a violation of an air quality standard for the following air contaminants emitted by the facility: particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, and lead. For the purposes of this permit, horizontal discharge vents that only discharge general building ventilation are not considered stacks. [s. NR 406.17(3)(c), Wis. Adm. Code.]

The following modeling requirements only apply when making changes at your facility after you are covered under this permit.

3. Changes at the Facility, after the date of coverage under the registration permit:

If the owner or operator adds or makes changes to any existing stacks venting emissions from heatset web offset printing presses or distillate fuel oil fired combustion units which would result in an increase in the ambient impact of the stack's emissions, or adds or changes a heatset web offset press or distillate fuel oil fired combustion unit so as to increase the emission rate of particulate matter from a stack or stacks, then the requirements in either B.3.a. or b. shall be met:

a. If the facility meets the stack requirements in B.1, then the owner or operator shall demonstrate through an air dispersion modeling analysis that the facility's particulate matter emissions will not cause or exacerbate a violation of an air quality standard for particulate matter. This modeling analysis is NOT required if one of the following conditions is met:

i. The facility does not contain any heatset web offset presses[5].

ii. All heatset web offset presses used at this facility emit less than 0.5 lb/hr particulate matter emissions from each stack.

iii. **Annual maximum controlled emissions of particulate matter** from all heatset web offset presses and combustion units combined at the facility are less than 5 tons/year, excluding emissions from the heatset web offset presses that emit less than 0.5 lb/hr.

b. If the facility meets the requirements of B.2., the owner or operator shall demonstrate through an air dispersion modeling analysis that the facility continues to meet the ambient air quality standards as specified in B.2.

[ss. 285.65(3), Stats., and NR 406.17(3)(c), Wis. Adm. Code]

Code, using the threshold values listed in Table A of that chapter, need to ensure that hazardous air pollutants are vented from stacks that meet the requirements in s. NR 445.07(6)(a), Wis. Adm. Code.

[5] This requirement is saying that, regardless of whether or not you burn distillate fuel oil, if you don't have any heatset web offset printing presses, you do not need to model for particulate matter emissions as long as your distillate fuel oil fired combustion units vent from stacks meeting the requirements in B.1

C. PROHIBITIONS

Changes at your facility that result in any of the following will make your facility ineligible to remain covered under this Registration Permit. You will need to apply for and receive a different type of permit *before* doing any of the following activities.

1. The owner or operator may not add or change emission units or operations so that the emissions of hazardous air contaminants with a control requirement listed in column (i) of Table A under s NR 445.07, Wis. Adm. Code, would require a case-by-case BACT or LAER determination for hazardous air pollutants. [s. NR 406.17(3)(d), Wis. Adm. Code.]

2. The owner or operator may not change the physical conditions of any stack which exhausts emissions from a heatset web offset press or any fuel combustion unit firing distillate fuel oil such that it no longer meets the criteria in B.1 or 2. above. [s. 285.65(3), Wis. Stat. and NR 445.07(6)(a), Wis. Adm. Code]

D. COMPLIANCE DEMONSTRATION REQUIREMENTS

All Facilities need to meet the compliance demonstration requirement in D.1.and D.2. below.

1. Annual Actual Facility-wide Emission Calculations

By March 1st of each year, for the previous calendar year, the owner or operator shall do one of the following to determine if they meet the emissions limits in A.1. [s. NR 406.17(1)(c), Wis. Adm. Code.]

a. Show that material or fuel usage or both, or **total heat input capacity** is below the respective thresholds in **Attachment 1**. Where a control device is used to reduce emissions, the emissions for the affected pollutants must be calculated according to D.1.b.

OR

b. Calculate the **annual actual facility-wide emissions** of each criteria pollutant, each federally regulated hazardous air pollutant emitted and the sum of all federally regulated hazardous air pollutants by this facility. Emissions shall be calculated as follows:

i. All emissions from the facility shall be included in the calculation except insignificant emissions and emissions from insignificant emissions units.

ii. If the facility uses a control device to reduce emissions, the control efficiencies listed in ***Section G*** of this permit or the efficiency specifically required in an applicable requirement, whichever is higher, shall be used to calculate **annual actual facility-wide emissions**. A facility that has demonstrated a higher efficiency level through a Department-approved test, which occurred within 5 years prior to the date you filed an application for this permit, may use this higher efficiency level to calculate annual actual facility-wide emissions. If the tested control efficiency is used, that control efficiency shall replace the stated control efficiency specified in Section G, thereby becoming the required control efficiency.

iii. Work practices and pollution prevention techniques that reduce emissions are not considered control devices for the purposes of this permit. These practices and techniques may be

D. COMPLIANCE DEMONSTRATION REQUIREMENTS

considered when calculating the **annual actual facility-wide emissions** as long as such reductions are quantifiable[6].

iv. **Annual actual facility-wide emissions** shall be calculated using the actual operating schedule, actual amounts of raw materials used or products produced, or actual amounts of fuels burned during the calendar year.

2. Other Applicable Requirements

The owner or operator shall ensure that appropriate methods for demonstrating compliance methods are in place and followed for all other requirements applicable to this facility in ch. 285, Wis. Stats., and chs. NR 400 to NR 499, Wis. Adm. Code, and all applicable federal air pollution requirements in the Clean Air Act (42 USC 7401 to 7671q) and 40 CFR parts 50 to 97. [s. NR 406.17(1)(c), Wis. Adm. Code.]

Facilities that need to use a control device to meet any applicable limit shall meet the following compliance demonstration requirements:

3. If the owner or operator must use a control device to meet the facility-wide annual actual emissions limit in A.1., or any other applicable emission limitation in ch. 285, Wis. Stats., and chs. NR 400-499, Wis. Adm. Code, and any other applicable federal air pollution requirement in the Clean Air Act (42 USC 7401 to 7671q and 40 CFR parts 50 to 97), then the following requirements shall be met:

a. The control device shall be listed in ***Section G*** of this permit or otherwise specifically required by an applicable air pollution requirement.

b. The control device shall meet, at a minimum, the control efficiency listed in ***Section G*** for the device or the efficiency specifically required in the applicable requirement, whichever is higher. If a facility is using a higher control efficiency to calculate annual emissions in Condition E.1, then the control device shall meet that control efficiency at all times.

c. The control device shall be used at all times the emission unit is operating except as allowed by the applicable emission limitation or under an approved plan pursuant to ch. NR 436, Wis. Adm. Code. [s. NR 406.17(1)(c), Wis. Adm. Code.]

d. A facility opting to meet a higher control efficiency than those listed in ***Section G*** to demonstrate compliance with the **annual actual facility-wide emission** limits in A.1 of this permit must verify that they can meet that control efficiency by performing a stack test within 5 years of the date of the previous Department-approved stack test. [s. NR 439.075(1)(b) and (c), Wis. Adm. Code]

Facilities that are meeting the limit in A.4.a. shall meet the following compliance demonstration requirement.

4. By March 1 of each year, the owner or operator shall calculate the amount of **photochemically reactive organic compounds** or **volatile organic compounds,** as appropriate, emitted by each **process line** subject to LACT, for the previous calendar year. Emissions may not exceed 10 tons per **process line**. Alternatively, material usage at each process line may not exceed the thresholds in Attachment 2 of this permit. [ss. NR 406.17(1)(c) and NR 439.04(1)(d), Wis. Adm. Code.]

[6] Work practices that reduce emissions include techniques such as applying water to dust piles or road ways, the practice of keeping containers of organic compounds or used rags covered and other pollution prevention techniques

E. RECORDKEEPING AND MONITORING REQUIREMENTS

All facilities must keep the following records.

1. Records to Calculate Annual Actual Emissions:

The owner or operator shall maintain records sufficient to calculate annual actual facility-wide emissions for the previous calendar year as required in Condition D.1. [ss. NR 406.17(1)(c) and 439.04(1)(d), Wis. Adm. Code.]

2. Recordkeeping and Monitoring Requirements for all Other Applicable Requirements:

The owner or operator shall conduct monitoring and maintain records sufficient to demonstrate compliance with all other applicable requirements in ch. 285, Wis. Stats., and chs. NR 400 to NR 499, Wis. Adm. Code, and all applicable federal air pollution requirements in the Clean Air Act (42 USC 7401 to 7671q) and 40 CFR parts 50 to 97. [ss. NR 406.17(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]

Facilities with heatset web offset presses and fuel combustion units firing distillate fuel oil must keep the following records:

3. Records to Calculate Particulate Matter Emissions:

The owner or operator shall maintain records used to calculate the amount of particulate matter emissions from each heatset web offset press stack and the **annual maximum controlled emissions of particulate matter** from the facility, except for insignificant emissions units identified in Attachment 3**.** [s. NR 439.04(1)(d), Wis. Adm. Code]

The records required in E.1 and E.2. above may be kept in a variety of ways. The following requirements apply based on the *type* of records that are kept.

4. Records For Emissions from Fuel Combustion:

a. If the total heat input capacity of all fuel combustion units at the facility is equal to or less than the capacity listed in Attachment 1, then the owner or operator may demonstrate compliance with facility wide emission caps for SO2, NOx and CO by maintaining a list of all fuel burning units with their maximum heat input capacity, in MMBTU/hr, and the types of fuels burned each year, **OR**

b. The owner or operator shall record the amount and type of fuel purchased or used (whichever is used to calculate emissions) at the facility for the previous calendar year. [ss. NR 406.17(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]

5. Organic compound and s. 112(b) Clean Air Act Hazardous Air Pollutant (HAP) Records: If materials containing regulated organic compounds or **HAPs** regulated under s. 112 (b) of the Clean Air Act are used at the facility, the owner or operator shall:

a) If meeting the material usage thresholds indicated in Attachment 1 and/or 2, record the amount of all material used (inks, coatings, solvents, etc.) in pounds or gallons, with separate totals for:

i) The amount of materials containing any VOCs, for each process line meeting limit A.4.a and for the total facility,

ii) The amount of materials containing the same individual 112(b) HAP, and

iii) The combined amount of all materials containing any 112(b) HAPs; **OR**

b) If calculating emissions, record the amounts of each material used and specific VOC or s. 112(b) HAP content in each material as necessary to perform the calculations or alternatively, use the materials with highest VOC and HAP content to represent each class of material (inks, solvents, adhesives, coatings, etc.) used by the facility. [s. NR 406.17(1)(c), Wis. Adm. Code.]

E. RECORDKEEPING AND MONITORING REQUIREMENTS

6. For each material containing organic compounds and sec. 112(b) HAPs used at the facility, maintain a material safety data sheet (MSDS), or other equivalent document, listing the amount of each VOC and sec. 112(b) HAP in the material. [s. NR 406.17(1)(c), Wis. Adm. Code.]

Monitoring and Recordkeeping requirements associated with stacks and modeling requirements. Only facilities with heatset web offset presses or fuel combustion units need to keep these records

7. Records of Stack Parameters:

The owner or operator of a facility subject to the requirements of B.1. or B.2. shall keep and maintain on site technical drawings, blueprints or equivalent records that describe or illustrate the physical stack parameters of each stack. [s. 285.65(3), Wis. Stats.]

8. Modeling Records:

If the owner or operator performed an air dispersion modeling analysis to demonstrate eligibility for this permit, or to demonstrate that changes protect ambient air quality standards as required under B.2. or B.3., of this permit, the owner or operator shall maintain on site records of the modeling input files used in the modeling analyses and the output files sufficient to show the results of all required air dispersion modeling analyses. [ss. NR 406.17(1)(c) and NR 439.04(1)(d), Wis. Adm. Code.]

Other Monitoring and Recordkeeping requirements that may apply to your facility.

9. Records Retention:

The owner or operator shall keep on site all records required by this permit for at least five years, unless a longer time period is required under any other condition of this permit or by statute or rule. [ss. NR 406.17(1)(c), NR 439.04(1)(d), and NR 439.04(2), Wis. Adm. Code]

The monitoring and recordkeeping requirements below apply to facilities that must use a control device in order to meet any limit in this permit.

10. Air Pollution Control Device Monitoring and Maintenance:

If an emission unit at the facility is equipped with an air pollution control device, the owner or operator shall:

- **a.** Monitor the operation of the control device to ensure that it is operating properly. The parameters to be monitored and the frequency of monitoring are contained in E.12. of this permit. If a control device is not listed in E.12. of this permit, the owner or operator shall monitor the device as recommended by the control device manufacturer or based on good engineering practice.
- **b.** Perform maintenance on the control device as recommended by the control device manufacturer, or at a frequency based on good engineering practice as established by operational history, whichever is more appropriate. [ss. 285.65(3), Wis. Stats and NR 406.17(1)(c) and NR 439.055, Wis. Adm. Code]

11. Air Pollution Control Device Operational Parameter Ranges:

The owner or operator shall maintain a list of the proper control device parameter ranges for each control device at the facility. These ranges shall be based on the control device manufacturer's recommendations or good engineering practice as established by operational history. [ss. NR 406.17(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]

E. RECORDKEEPING AND MONITORING REQUIREMENTS

12. Air Pollution Control Device Monitoring Records:

For each control device used to meet any applicable limit in this permit, the owner or operator shall monitor and record the appropriate control device parameters at the specified frequency as listed below. If the facility operates a type of control device that is not listed below, then the owner or operator shall keep records of control device parameters which demonstrate the proper operation of the device. [ss. NR 406.17(1)(c), NR 439.04(1)(d) and 439.055, Wis. Adm. Code]

If you operate this control device:	You must monitor this parameter:	You must record a reading this often:
Centrifugal Collector (cyclone)	Pressure drop	Once every 8 hours of operation or once per day, whichever yields the greater number of measurements
Fabric filters (e.g., baghouse, cartridge collectors)	Pressure drop	Once every 8 hours of operation or once per day, whichever yields the greater number of measurements
Thermal oxidizers	Temperature in the combustion chamber	Once every 15 minutes of operation
Catalytic oxidizers	Temperature in the inlet to the catalytic bed **AND** Catalyst bed reactivity	Once every 15 minutes of operation As per manufacturer specification
Condenser	Condenser outlet gas temperature	Once every 8 hours of operation or once per shift, whichever yields the greater number of measurements
Biofilter	Bed temperature, moisture content	Once per day of operation

F. REPORTING AND NOTIFICATION REQUIREMENTS

All facilities covered by this permit shall comply with the following reporting and notification requirements:

1. Annual Summary of Monitoring, and Certification of Compliance

By **June 30** of each year, the owner or operator shall submit to the Wisconsin Department of Natural Resources a report containing a certification of annual actual emissions, an annual summary of monitoring, and a compliance certification[7]. [ss. NR 406.17(1)(c), 438.03(5)(c), and NR 439.03(1)(b) and (c), Wis. Adm. Code]

2. Air Emission Inventory Report:

By **March 1** of each year, the owner or operator shall submit an air emission inventory report of annual, actual emissions or throughput information in accordance with ch. NR 438, Wis. Adm. Code. Facilities with emissions below reporting thresholds in ch. NR 438, Wis. Adm. Code, shall, as part of the annual Certification required in F.1. above, indicate that emissions are below reporting levels. The owner or operator may ask for, and the Department may grant, a 15 day extension for the submission of the air emission

[7] A template for this report is available for download through Department's registration permit website at http://www.dnr.state.wi.us/org/aw/air/apii/regpermits.html

F. REPORTING AND NOTIFICATION REQUIREMENTS

inventory report. [ss. NR 406.17(1)(c) and NR 438.03(1)(a), Wis. Adm. Code]

3. Annual Air Emission Fees:

The owner or operator shall pay an annual emissions fee to the Department at the rate specified in s. 285.69(2), Wis. Stats. The fees are due by June 30 of each year. [ss. 285.69(2), Stats., and NR 410.04, Wis. Adm. Code]

Additional reporting for facilities that changed ownership or made a physical change or a change in the method of operation or raw material during the past year.

4. Change of Ownership or Control:

The Bureau of Air Management shall be notified of a change of ownership or control of a facility covered by this permit within 30 calendar days. The notification shall include a written agreement between the current and new owner which sets forth a specific date for the transfer of permit responsibility, coverage and liability. [s. NR 406.17(1)(c), Wis. Adm. Code]

Facilities that want to change operations in such a way that they'll no longer be eligible for this permit must notify the Department as follows *before* making these changes:

5. Changes Rendering Your Facility Ineligible for This Permit:

If the owner or operator plans to make a change at the facility that will result in the facility no longer being eligible for this permit:

a. Before making the change, the owner or operator shall submit to the Department an application for a construction permit, unless the change is exempt under ch. NR 405, 406 and 408.

b. Before making the change, the owner or operator shall request in writing that coverage under this registration permit be revoked upon issuance of any required air permit, and submit to the Department an application for a different type of permit, if required.

c. The owner or operator may not make the change until any required air pollution control construction and/or operation permit(s) are obtained.

[s. NR 407.105(6)(a) and (e), Wis. Adm. Code]

G. AIR POLLUTION CONTROL DEVICE REQUIREMENTS

Table 2. Air Pollution Control Device Efficiencies

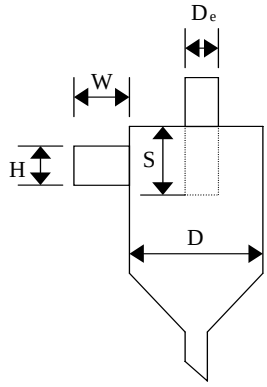
Control Device	Control Efficiency (Total Enclosure)[8]			Control Efficiency (Hood)		
	PM	PM_{10} and PHAP	VOC and VHAP	PM	PM_{10} and PHAP	VOC and VHAP
Low efficiency cyclone[9]	40%	20%	-	32%	16%	-
Medium efficiency cyclone[19]	60%	40%	-	48%	32%	-
High efficiency cyclone[19]	80%	60%	-	64%	48%	-
Wall filters (including paint overspray filters and rotary drum filters)	95%	95%	-	76%	76%	-
Fabric filters and HEPA filters (e.g., baghouse, cartridge collectors)	98%	92%	-	78%	73%	-
Thermal oxidizers	-	-	90%	-	-	76%
Catalytic oxidizers	-	-	90%	-	-	76%
Condenser	-	-	70%	-	-	56%
Biofilter	-	-	80%	-	-	64%

Table 3. Cyclone Efficiency Table (see Diagram 1. for cyclone dimension nomenclature)

Ratio Dimensions	High Efficiency	Medium Efficiency	Low Efficiency
Height of inlet, H/D	≤0.44	>0.44 and <0.8	≥0.8
Width of inlet, W/D	≤0.2	>0.2 and <0.375	≥0.375
Diameter of gas exit, D_e/D	≤0.4	>0.4 and <0.75	≥0.75
Length of vortex finder, S/D	≤0.5	>0.5 and <0.875	≥0.875

If one or more of the "ratio dimensions," as listed in Table 3, are in a different efficiency category (high, medium, low), then the lowest efficiency category shall be applied.

Diagram 1. Cyclone Dimension Nomenclature



[8] VHAP = Volatile hazardous air pollutan ıtant.
[9] See Table 3, below, to identify level of e

ATTACHMENT 1 THE FOLLOWING ANNUAL MATERIAL AND FUEL USAGE THRESHOLDS ENSURE THAT EMISSIONS WILL NOT EXCEED EMISSIONS CAPS IN A.1	
Press Type	**Material Usage**[10]
Sheetfed/ Non-heatset Lithographic	7,125 gallons of cleaning solvent and fountain solution additives
Heatset Web Offset Lithographic	50,000 lbs of ink, cleaning solvent and fountain solution additives
Digital Printing	5,500 gallons of solvent from inks, clean up solutions
Screen Printing	7,125 gallons of solvent from inks, clean up solutions
Flexographic (Water-based and UV)	200,000 pounds of water-based and/or UV inks, coatings and adhesives
Flexographic (Solvent)	50,000 pounds of solvent from inks, dilution solvents, coatings and adhesives.
Multiple press types at one facility	Find the lowest threshold above that applies to at least one of the presses at the facility, and compare total material usage to that threshold. If material usage is greater than that threshold, then facility must calculate actual emissions to determine if eligible.
Federal *HAPs*	**Material Usage**
Federal **HAPs**, individual	1,333 gallons of all press materials with that federal HAP, no matter the % content
Federal **HAPs**, combined	3,333 gallons of all press materials with at least one federal HAP, no matter the % content
Fuel (Unit Size)	**Fuel Usage**
Natural Gas[11] (<10 million Btu/hr)	500 million cubic feet/yr
Natural Gas (10-100 million Btu/hr)	350 million cubic feet/yr
Distillate Fuel Oil [sulfur = 0.05%]	2,500,000 gallons/yr
Fuel	**Total Heat Input Capacity Cap**
Natural Gas and Distillate Fuel Oil (sulfur = 0.05% wt or less)	39 mmBtu/hr

[10] The material usage threshold for heatset presses has been shown to restrict the PM emissions to level well below the 25 TPY emission cap, even for uncontrolled presses.
[11] Natural gas includes propane.

ATTACHMENT 2 THE FOLLOWING ANNUAL MATERIAL USAGE THRESHOLDS ENSURE THAT EMISSIONS WILL NOT EXCEED EMISSIONS CAPS IN A.4.a.	
Press Type	**Material Usage**
Sheetfed/ Non-heatset Lithographic	2,840 gallons of cleaning solvent and fountain solution additives
Heatset Web Offset Lithographic	20,000 lbs of ink, cleaning solvent and fountain solution additives
Digital Printing	2,425 gallons of solvent from inks, clean up solutions
Screen Printing	2,840 gallons of solvent from inks, clean up solutions
Flexographic (Water-based and UV)	80,000 pounds of water-based and/or UV inks, coatings and adhesives
Flexographic (Solvent)	20,000 pounds of solvent from inks, dilution solvents, coatings and adhesives.

ATTACHMENT 3

THE FOLLOWING ARE CONSIDERED INSIGNIFICANT EMISSION UNITS OR ACTIVITIES FOR PURPOSES OF REGISTRATION PERMIT STACK REQUIREMENTS

1. Convenience space heating units with heat input capacity of less than 5 million Btu per hour that burn gaseous fuels, liquid fuels or wood
2. Convenience water heating
3. Maintenance of grounds, equipment and buildings, including lawn care, pest control, grinding, cutting, welding, painting, woodworking, general repairs and cleaning, but not including use of organic compounds as cleanup solvents
4. Boiler, turbine, generator, heating and air conditioning maintenance
5. Pollution control equipment maintenance
6. Internal combustion engines used for warehousing and material transport, forklifts and courier vehicles, front end loaders, graders and trucks, carts and maintenance trucks
7. Fire control equipment
8. Janitorial activities
9. Office activities
10. Fuel oil storage tanks with a capacity of 10,000 gallons or less
11. Stockpiled contaminated soils
12. Demineralization and oxygen scavenging of water for boilers.
13. Purging of natural gas lines.
14. Particulate matter from natural gas combustion in press dryers, control device, and other heating units so long as fuel usage or heat input capacity caps in Attachment 1 are met.
15. Aerosol cans
16. Pad printing
17. Pre-press equipment, such as: photo-processing, typesetting, or image-setting equipment;
18. Proofing systems utilizing water-based, ink jet, dry toner, or dye sublimation or proof press designed to evaluate product quality;
19. Plate-making equipment or screen preparation activities utilizing water-based developing solutions;
20. Equipment used to make blueprints.
21. Cold cleaning manual parts washers with less than 10 square feet of surface area.
22. Dry toner or other digital presses that apply water-based inks.
23. Substrate finishing activities which involve paper folding, cutting, folding, trimming, die cutting, embossing, foil stamping, drilling, saddle stitching, sewing, perfect binding, vacuum forming or other activities that do not generate VOCs and whose particulate emissions are vented inside the facility.
24. Adhesive application activity involving hot melt, extrusion, catalyzed solvent-less, or water-based adhesives.
25. Pneumatic system for collecting paper/film/paperboard scrap from cutting operations.
26. Any emission unit, operation, or activity that has, for each air contaminant, maximum controlled emissions that are less than the level specified in Table 3 of ch. NR 407, Wis. Adm. Code. Multiple emissions units, operations, or activities that perform identical or similar functions shall be combined for the purposes of this determination.
27. If the maximum controlled emissions of any air contaminants listed in Table 3 of ch. NR 407, Wis. Adm. Code, from all emission units, operations or activities at a facility are less than 5 times the level specified in Table 3, for those air contaminants, any emission unit operation or activity that emits only those air contaminants.