State of Ohio Environmental Protection Agency

STREET ADDRESS:
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Columbus, Ohio 43215

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P.O. Box 1049
Columbus, OH 43216-1049

Certified Mail

4/20/2009

Gregory Tremonti
NORTH TOLEDO GRAPHICS LLC
5225 TELEGRAPH RD.
Toledo, OH 43612

No	TOXIC REVIEW
No	PSD
Yes	SYNTHETIC MINOR
No	CEMS
No	MACT
No	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED

RE: FINAL AIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 0448010300
Permit Number: P0088115
Permit Type: Initial Installation
County: Lucas

Dear Permit Holder:

Enclosed please find a final Air Pollution Permit-to-Install and Operate ("PTIO") which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully.

Ohio EPA maintains a document entitled "Frequently Asked Questions about the PTIO". The document can be downloaded from the DAPC Web page, www.epa.state.oh.us/dapc, from the "Permits" link. This document contains additional information related to your permit, such as what activities are covered under the PTIO, who has enforcement authority over the permit and Ohio EPA's authorization to inspect your facility and records. Please contact the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469 if you need assistance.

The issuance of this PTIO is a final action of the Director and may be appealed to the Environmental Review Appeals Commission ("ERAC") under Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and describe the action complained of and the grounds for the appeal. The appeal must be filed with the ERAC within thirty (30) days after notice of the Director's action. A filing fee of $70.00 must be submitted to the ERAC with the appeal, although the ERAC, has discretion to reduce the amount of the filing fee if you can demonstrate (by affidavit) that payment of the full amount of the fee would cause extreme hardship. If you file an appeal of this action, you must notify Ohio EPA of the filing of the appeal (by providing a copy to the Director) within three (3) days of filing your appeal with the ERAC. Ohio EPA requests that a copy of the appeal also be provided to the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the ERAC at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, OH 43215

If you have any questions regarding this permit, please contact the Toledo Department of Environmental Services. This permit has been posted to the Division of Air Pollution Control (DAPC) Web page www.epa.state.oh.us/dapc.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager
Permit Issuance and Data Management Section, DAPC

Cc: TDES

State of Ohio Environmental Protection Agency
Division of Air Pollution Control

FINAL

Air Pollution Permit-to-Install and Operate

for

NORTH TOLEDO GRAPHICS LLC

Facility ID:	0448010300
Permit Number:	P0088115
Permit Type:	Initial Installation
Issued:	4/20/2009
Effective:	4/20/2009
Expiration:	4/20/2014

State of Ohio Environmental Protection Agency
Division of Air Pollution Control

Air Pollution Permit-to-Install and Operate

for

NORTH TOLEDO GRAPHICS LLC

Table of Contents

Authorization

Facility ID: 0448010300
Application Number(s): A0019254
Permit Number: P0088115
Permit Description: Offset web printing presses for printed material
Permit Type: Initial Installation
Permit Fee: $0.00
Issue Date: 4/20/2009
Effective Date: 4/20/2009
Expiration Date: 4/20/2014
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15
This document constitutes issuance to:

NORTH TOLEDO GRAPHICS LLC
5225 TELEGRAPH ROAD
Toledo, OH 43612

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

Ohio EPA District Office or local air agency responsible for processing and administering your permit:

Toledo Department of Environmental Services
348 South Erie Street
Toledo, OH 43604
(419)936-3015

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Chris Korleski
Director

Authorization (continued)

Permit Number: P0088115
Permit Description: Offset web printing presses for printed material

Permits for the following emissions unit(s) or groups of emissions units are in this document as indicated below:

Emissions Unit ID:	**K002**
Company Equipment ID:	K002
Superseded Permit Number:	04-01432
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**K005**
Company Equipment ID:	K005
Superseded Permit Number:	04-01432
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**K007**
Company Equipment ID:	K007
Superseded Permit Number:	04-01432
General Permit Category and Type:	Not Applicable

A. Standard Terms and Conditions

1. What does this permit-to-install and operate ("PTIO") allow me to do?

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

2. Who is responsible for complying with this permit?

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

3. What records must I keep under this permit?

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

4. What are my permit fees and when do I pay them?

There are two fees associated with permitted air contaminant sources in Ohio:

- PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

  You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

- Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. For facilities that are permitted as synthetic minor sources, the fee schedule is adjusted annually for inflation. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

5. When does my PTIO expire, and when do I need to submit my renewal application?

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

6. What happens to this permit if my project is delayed or I do not install or modify my source?

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

7. What reports must I submit under this permit?

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.

10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the Toledo Department of Environmental Services in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

12. What happens if one or more emissions units operated under this permit is/are shut down permanently?

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emission unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

13. Can I transfer this permit to a new owner or operator?

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the

change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

15. What happens if a portion of this permit is determined to be invalid?

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.

B. Facility-Wide Terms and Conditions

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

   a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

      (1) None.

   b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

      (1) None.

C. Emissions Unit Terms and Conditions

1. K002

Operations, Property and/or Equipment Description:

K002 - Line 2 Heatset Offset Web Lithographic Printing Presses and (2) 1.725 mmBtu/hr natural gas-fired dryers. Press Units F & G, Dryers 1 & 2 controlled by regenerative thermal oxidizer (RTO)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. See b(1)b., b)(2)b., c)(1), c)(2), d)(1) thru d)(3), e)(1), f)(1)a., f)(1)c., f)(1)x. and f)(2).

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
Heatset Offset Web Lithographic Printing Presses and (2) 1.725 mmBtu/hr natural gas-fired dryers. Press Units F & G, Dryers 1 & 2		
a.	OAC rule 3745-31-05(A)(3) (PTI 04-01432 issued 4/25/2006)	Organic compound (OC) emissions shall not exceed 7.77 lbs/hr. Particulate emissions (PE) shall not exceed 0.007 lb/hr and 0.03 ton/yr. Sulfur dioxide (SO_2) emissions shall not exceed 0.005 lb/hr and 0.02 ton/yr. Nitrogen oxides (NOx) emissions shall not exceed 0.34 lb/hr and 1.5 tons/yr. Carbon monoxide (CO) emissions shall not exceed 0.29 lb/hr and 1.3 tons/yr. 95% destruction efficiency for OC for the

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		incinerator.
b.	OAC rule 3745-31-05(D) (PTI 04-01432 issued 4/25/2006)	Organic compound (OC) emissions shall not exceed 16.24 tons/yr. See b)(2)b.
Combustion product emissions from 4.0 mmBtu/hr regenerative thermal oxidizer serving as control for emissions units K002, K005 and K007		
c.	OAC rule 3745-31-05(A)(3) (PTI 04-01432 issued 4/25/2006)	PE shall not exceed 0.01 lb/hr and 0.04 ton/yr. SO_2 emissions shall not exceed 0.002 lb/hr and 0.01 ton/yr. NOx emissions shall not exceed 0.39 lb/hr and 1.7 tons/yr. CO emissions shall not exceed 0.33 lb/hr and 1.4 tons/yr. Volatile organic compounds (VOC) emissions shall not exceed 0.02 lb/hr and 0.09 ton/yr. Visible emissions from the stack serving this emissions unit shall not exceed 5% opacity as a 6-minute average.
d.	OAC rule 3745-17-07(A)(1)	See b)(2)a.
e.	OAC rule 3745-17-11(B)(1)	See b)(2)a.
f.	OAC rule 3745-18-06(A)	Exemption (see b)(2)c.)
g.	OAC rule 3745-21-08(B)	See b)(2)d.

(2) Additional Terms and Conditions

a. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

b. The combined emissions from all emissions units at this facility shall not exceed 9.9 tons per rolling, 12-month period of any individual hazardous air pollutant and 24.9 tons of total hazardous air pollutants per rolling, 12-month period.

c. OAC rule 3745-18-06(A) does not establish SO_2 emission limitations for the fuel burning equipment associated with this emissions unit because the emissions unit only employs natural gas as fuel.

d. The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by complying with all applicable rules.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

c) Operational Restrictions

(1) The permittee shall employ coatings and materials as specified below, based on a volume-weighted average:

Printing inks: maximum of 70,833 lbs/month, with a maximum of 40% VOC by weight.

Fountain solution: maximum of 183.3 gals/month at a maximum of 9% VOC by volume, and a maximum density of 8.92 lbs/gal.

Clean-up Material: maximum of 166.7 gals/month, at a maximum of 97% VOC by volume, and a maximum density of 6.9 lbs/gal.

(2) The individual HAP and total HAP, combined, emission rates for all emissions units at the facility shall not exceed 9.9 and 24.9 tons per year, respectively, based upon a rolling, 12-month summation of emission rates

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall collect and record the following information for each month for the printing line:

a. The company identification for each material employed (i.e. printing ink, fountain solution, clean-up material).

b. The number of pounds of each ink employed, and the number of gallons of fountain solution and cleanup material employed.

c. the total HAP content of each ink employed in percent by weight and of each fountain solution and cleanup material employed in pounds per gallon; and

d. the individual HAP content of each ink in percent by weight and of each fountain solution and cleanup material in pounds per gallon.

e. the rolling, 12-month summation of total HAP emissions from all emissions units located at this facility, in tons; and

f. the rolling, 12-month summation of individual HAP emissions from all emissions units located at this facility, in tons.

(2) The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the thermal incinerator when the source is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ±1 percent of the temperature being measured or ±5 degrees, whichever is greater. The temperature monitor and recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

(3) The permittee shall collect and record the following information each day for the control equipment:

a. a log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated sources; and

b. all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated that the emissions unit was in compliance. There are a total of eight 3-hour blocks of time during each day.

e) Reporting Requirements

(1) The permittee shall submit quarterly written deviation (excursion) reports which include the following information:

a. all monthly records which show that the material usage or composition exceeds the limitations specified in c)(1);

b. all 3-hour blocks of time during which the average temperature of the exhaust gases was more than 50 degrees Fahrenheit below the average temperature during the most recent performance test that demonstrated the until was in compliance;

c. all exceedances of the rolling, 12-month total HAP emission limitations set forth in c)(2) of this permit;

d. all exceedances of the rolling, 12-month individual HAP emission limitations set forth in c)(2) of this permit; and

e. any period of time (start time and date, and end time and date) when the emissions unit was in operation and the process emissions were not vented to the thermal oxidizer.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by April 30, July 31, October 31 and January 31 of each year and shall cover the previous calendar quarter. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that period.

(2) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee

shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

(3) The permittee shall identify in the annual permit evaluation report the following information concerning the operations of the thermal oxidizer during the 12-month reporting period for this emissions unit:

a. each period of time (start time and date, and end time and date) when the average combustion temperature within the thermal oxidizer was outside the acceptable range;

b. any period of time (start time and date, and end time and date) when the emissions unit was in operation and the process emissions were not vented to the thermal oxidizer;

c. each incident of deviation described in (3)a. or (3)b. (above) where a prompt investigation was not conducted;

d. each incident of deviation described in (3)a. or (3)b. where prompt corrective action, that would bring the emissions unit into compliance and/or the temperature within the thermal oxidizer into compliance with the acceptable range, was determined to be necessary and was not taken; and

e. each incident of deviation described in (3)a. or (3)b. where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and recordkeeping requirements of this permit.

f) Testing Requirements

(1) The permittee shall submit quarterly written deviation (excursion) reports which include the following information:

a. Emission Limitation:

95% destruction efficiency

Applicable Compliance Method:

If required, Methods 1thru 4 and 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A, and the procedures outlined in OAC rule 3745-21-10(C) shall be used to demonstrate compliance. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10(C). The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration of the potential presence of interfering gases.

To convert a mass emission value from VOC as carbon to VOC, divide the mass emission value of VOC as carbon by the weight fraction of carbon in the average molecular weight of the VOC emission. The determination of this weight fraction

of carbon may be based on standard analytical techniques or material formulation data.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

b. Emission Limitation:

7.77 lbs/hr OC

Applicable compliance method:

This emission limitation was based on the maximum combined stack and fugitive emissions from ink, fountain solution and cleanup solvent using the calculation method specified in following Ohio EPA Engineering Guide #56 dated June 15, 1999.

Stack emissions, S, (lbs/hr) from the printing process:

$S = (1- DRE)[0.8 (P) + A_d (FS) + B_d (CS)]$

Fugitive emissions, F, (lbs/hr) from printing process are:

$F = A_f(FS) + B_f (CS)$

where:

DRE = destruction or removal efficiency of control device, expressed as a decimal

P = (ink usage, lbs/hr) X (ink VOC content, % by weight)

FS = (fountain solution usage rate, gal/hr) X (fountain solution VOC content, lbs VOC/gal)

CS = (cleanup solvent usage rate, gal/hr) X (cleanup solvent VOC content, lbs VOC/gal)

A_d = mass fraction of fountain solution VOC routed to dryer and control device;
$A_d = 0.7$

B_d = mass fraction of cleanup solvent routed to dryer and control device;
$B_d = 0.0$

A_f = mass fraction of fountain solution VOC emitted as fugitive;
$A_f = 0.3$

B_f = mass fraction of cleanup solvent emitted as fugitive;
$B_f = 0.5$ (if solvent vapor pressure < 10 mm Hg at 20 deg. C (68 deg. F) and used rags are stored in closed containers)

If required, the permittee shall demonstrate compliance with this emission limitation through the use of the following to be used in the above Engineering Guide #56 calculation:

i. the procedures in f)(1)a. shall be used to determine the actual destruction efficiency;

ii. Method 24 and 24A of 40 CFR Part 60, Appendix A shall be used to determine the VOC content of the ink, fountain solution and cleanup solvent used during the test; and

iii. the actual usage rate of ink, fountain solution and cleanup solvent shall be recorded during the test.

The sum of the hourly stack emissions (as calculated by Engineering Guide #56) shall be added to the hourly fugitive emissions (as calculated by Engineering Guide #56) to obtain the total hourly emissions from this emissions unit.

c. Emission Limitation:

16.24 tons/yr OC

Applicable Compliance Method:

This emission limitation was based on the combined stack and fugitive emissions using the calculation contained in Engineering Guide #56, the operational restrictions contained in c)(1) and the 95% destruction efficiency requirement. Compliance with the Operational Restrictions in c)(1) and the 95% destruction efficiency requirement shall serve as demonstration of compliance with the annual emission limitation.

d. Emission Limitation:

0.29 pound of CO per hour from the dryers

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 84 pounds of CO emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply the result by the maximum heat input capacity of (2) x 1.725 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4 and 10 of 40 CFR Part 60 Appendix A. Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

e. Emission Limitation:

1.3 tons of CO per year from the dryers

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.29 pound of CO per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

f. Emission Limitation:

0.34 pound of NOx per hour from the dryers

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 100 pounds of NOx emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of (2) x 1.725 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 7 of 40 CFR Part 60 Appendix A. Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

g. Emission Limitation:

1.5 tons of NOx per year from the dryers

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.34 pound of NOx per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

h. Emission Limitation:

0.007 pound of PE per hour from the dryers

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 1.9 pounds of PE per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of (2) x 1.725 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 5 of 40 CFR Part 60 Appendix A using the methods and procedures specified in

OAC rule 3745-17-03(B)(9). Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

i. Emission Limitation:

0.03 ton of PE per year from the dryers

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.007 pound of PE per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

j. Emission Limitation:

0.005 pound of SO_2 per hour from the dryers

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 0.6 pounds of SO_2 emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of (2) x 1.725 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 6 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-18-04. Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

k. Emission Limitation: :

0.02 ton of SO_2 per year from the dryers

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.005 pound of SO_2 per hour by 8,760 hours per year and divide by 2,000 pounds per ton

l. Emission Limitation:

The combined emissions from all emissions units at the facility shall not exceed 9.9 tons per rolling, 12-month period for any single HAP and 24.9 tons per rolling, 12-month period for any combination of HAPs.

Applicable Compliance Method:

The monitoring and record keeping requirements specified in d)(1) shall be used to demonstrate compliance.

m. Emission Limitation:

0.33 pound of CO per hour from thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 84 pounds of CO emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply the result by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4 and 10 of 40 CFR Part 60 Appendix A. Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

n. Emission Limitation:

1.4 tons of CO per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.33 pound of CO per hour by 8,760 hours per year and divide by 2,000 pounds per ton

o. Emission Limitation:

0.39 pound of NOx per hour from the thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 100 pounds of NOx emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 7 of 40 CFR Part 60 Appendix A. Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

p. Emission Limitation:

1.7 tons of NOx per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.39 pound of NOx per hour by 8,760 hours per year and divide by 2,000 pounds per ton

q. Emission Limitation: :

0.01 pound of PE per hour from the thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 1.9 pounds of PE per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 5 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-17-03(B)(9). Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

r. Emission Limitation: :

0.04 ton of PE per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.01 pound of PE per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

s. Emission Limitation:

0.002 pound of SO_2 per hour from the thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 0.6 pounds of SO_2 emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 6 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-18-04. Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

t. Emission Limitation: :

0.01 ton of SO_2 per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.002 pound of SO_2 per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

u. Emission Limitation:

0.02 pound of VOC per hour from the thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 5.5 pounds of VOC emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 25 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-21-10. Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

v. Emission Limitation:

0.09 ton of VOC per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.02 pound of VOC per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

w. Emission Limitation:

5% opacity as a 6-minute average from the thermal oxidizer stack

Applicable Compliance Method:

If required, compliance shall be demonstrated using Method 9 of 40 CFR Part 60, Appendix A.

x. Emission Limitation:

inks, with a maximum OC content of 40% by weight;
fountain solution, with a maximum OC content of 8.92 lbs/gal; and
clean-up material, with a maximum OC content of 6.9 lbs/gal

Applicable Compliance Method:

If required, U.S. EPA Methods 24 and 24A shall be used to determine the VOC contents for (a) coatings and (b) flexographic and rotagravure printing inks and related coatings, respectively. If, pursuant to Section 4.3 of Method 24, 40 CFR Part 60, Appendix A, the permittee determines that Method 24 or 24A cannot be used for a particular coating or ink, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating or ink to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24 or 24A.

(2) STACK TESTING
The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted 6 months after issuance of the PTIO and 6 months prior to permit renewal.

b. The emission testing shall be conducted to demonstrate compliance with:

i. the allowable mass emission rate for OC stack emissions from the printing process in pounds per hour;

ii. the VOC content of inks in weight percent and the VOC content of fountain solution and cleanup solvent in pounds per gallon; and

iii. control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system).

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

i. VOC content: Method 24 and 24A of 40 CFR Part 60, Appendix A for VOC content; Methods 1-4 and 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A for stack emissions and destruction efficiency.

ii. lbs/hr OC: Calculation using method described in f)(1)b.

iii. destruction efficiency: shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10(C). The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration,

and on a consideration of the potential presence of interfering gases. Samples shall be taken simultaneously at the inlet and outlet of the vapor control system.

iv. VOC content: U.S. EPA Methods 24 and 24A shall be used to determine the VOC contents for (a) coatings and (b) flexographic and rotagravure printing inks and related coatings, respectively. If, pursuant to Section 4.3 of Method 24, 40 CFR Part 60, Appendix A, the permittee determines that Method 24 or 24A cannot be used for a particular coating or ink, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating or ink to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24 or 24A.

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

f. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency. The test report shall include the average combustion temperature within the thermal oxidizer for each test run.

g) Miscellaneous Requirements

(1) None.

2. K005

Operations, Property and/or Equipment Description:

K005 - Rockwell C450 Heatset Offset Web Lithographic Printing Press and with two 1.92 mmBtu/hr burners on a natural gas-fired dryer/Line No. 5 controlled by regenerative thermal oxidizer (RTO).

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. See d)(4) thru d)(7) and e)(2).

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. See b(1)b., b)(2)b., c)(1), c)(2), d(1) through (3), e)(1), f)(1)a., f)(1)f., f)(1)l., and f)(2).

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
Rockwell C450 Heatset Offset Web Lithographic Printing Press and a natural gas-fired dryer with two 1.92 mmBtu/hr burners/Line No. 5		
a.	OAC rule 3745-31-05(A)(3) (PTI 04-01432 issued 4/25/2006)	Organic compound (OC) emissions shall not exceed 9.16 lbs/hr. Particulate emissions (PE) shall not exceed 0.02 lb/hr and 0.08 ton/yr. Sulfur dioxide (SO_2) emissions shall not exceed 0.002 lb/hr and 0.01 ton/yr. Nitrogen oxides (NOx) emissions shall not exceed 0.38 lb/hr and 1.68 tons/yr. Carbon monoxide (CO) emissions shall not exceed 0.32 lb/hr CO and 1.40 tons/yr.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		95% destruction efficiency for OC for the incinerator.
b.	OAC rule 3745-31-05(D) (PTI 04-01432 issued 4/25/2006)	Organic compound (OC) emissions shall not exceed 18.32 tons/yr. See section b)(2)b.
Combustion product emissions from 4.0 mmBtu/hr regenerative thermal oxidizer serving as control for emissions units K002, K005 and K007		
c.	OAC rule 3745-31-05(A)(3) (PTI 04-01432 issued 4/25/2006)	PE shall not exceed 0.01 lb/hr and 0.04 ton/yr. SO_2 emissions shall not exceed 0.002 lb/hr and 0.01 ton/yr. NOx emissions shall not exceed 0.39 lb/hr and 1.7 tons/yr. CO emissions shall not exceed 0.33 lb/hr and 1.4 tons/yr. Volatile organic compounds (VOC) emissions shall not exceed 0.02 lb/hr and 0.09 ton/yr. Visible emissions from the stack serving this emissions unit shall not exceed 5% opacity as a 6-minute average.
d.	OAC rule 3745-17-07(A)(1)	See b)(2)a.
e.	OAC rule 3745-17-11(B)(1)	See b)(2)a.
f.	OAC rule 3745-18-06(A)	Exemption (see b(2)c.)
g.	OAC rule 3745-21-08(B)	See b)(2)d.

(2) Additional Terms and Conditions

a. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

b. The combined emissions from all emissions units at this facility shall not exceed 9.9 tons per rolling 12-month period of any individual hazardous air pollutant and 24.9 tons of total hazardous air pollutants per rolling 12-month period.

c. OAC rule 3745-18-06(A) does not establish SO_2 emission limitations for the fuel burning equipment associated with this emissions unit because the emissions unit only employs natural gas as fuel.

d. The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by complying with all applicable rules.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

c) Operational Restrictions

(1) The permittee shall employ coatings and materials as specified below, based on a volume-weighted average:

Printing inks: maximum of 70,833 lbs/month, with a maximum of 40% VOC by weight.

Fountain solution: maximum of 233.3 gals/month, at a maximum of 9% VOC by volume.

Clean-up Material: maximum of 216.7 gals/month, at a maximum of 97% VOC by volume.

(2) The individual HAP and total HAP, combined, emission rates for all emissions units at the facility shall not exceed 9.9 and 24.9 tons per year, respectively, based upon a rolling, 12-month summation of emission rates.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall collect and record the following information for each month for the printing line:

a. The company identification for each material employed (i.e. printing ink, fountain solution, clean-up material).

b. The number of pounds of each ink employed, and the number of gallons of fountain solution and cleanup material employed.

c. the total HAP content of each ink employed in percent by weight and of each fountain solution and cleanup material employed in pounds per gallon; and

d. the individual HAP content of each ink in percent by weight and of each fountain solution and cleanup material in pounds per gallon.

e. the rolling, 12-month summation of total HAP emissions from all emissions units located at this facility, in tons; and

f. the rolling, 12-month summation of individual HAP emissions from all emissions units located at this facility, in tons.

[Note: The coating information must be for the coatings as employed, including any thinning solvents added at the emissions unit.]

(2) The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the thermal incinerator when the source is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ±1 percent of the temperature being measured or ±5 degrees, whichever is greater. The temperature monitor and recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

(3) The permittee shall collect and record the following information each day for the control equipment:

a. a log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated sources; and

b. all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated that the emissions unit was in compliance. There are a total of eight 3-hour blocks of time during each day.

(4) AIR TOXICS POLICY

The Permit to Install (PTI) application for this emissions unit, K005, was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee. The “Toxic Air Contaminant Statute”, ORC 3704.03(F), was applied to this emissions unit for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground level concentration result from the approved air dispersion model, was compared to the Maximum Acceptable Ground Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled “Review of New Sources of Air Toxic Emissions, Option A”, as follows:

a. The exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):

i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists’ (ACGIH) “Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices”; or

ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV

b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).

c. This standard was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit, i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

TLV/10 x 8/X x 5/Y = 4 TLV/XY = MAGLC

d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant:

Toxic Contaminant: Petroleum Distillate
TLV (mg/m3): 525,000
Maximum Hourly Emission Rate (lbs/hr): 4.78
Predicted 1-Hour Maximum Ground Level Concentration (ug/m3): 30.04
MAGLC (ug/m3): 12,500

Toxic Contaminant: Ethylene Glycol n-Butyl Ether
TLV (mg/m3): 125,000
Maximum Hourly Emission Rate (lbs/hr): 0.56
Predicted 1-Hour Maximum Ground Level Concentration (ug/m3): 10.22
MAGLC (ug/m3): 2,980

Toxic Contaminant: Cumene
TLV (mg/m3): 246,000
Maximum Hourly Emission Rate (lbs/hr): 0.17
Predicted 1-Hour Maximum Ground Level Concentration (ug/m3): 102.2
MAGLC (ug/m3): 5,857

Toxic Contaminant: Trimethylbenzenes
TLV (mg/m3): 123,000
Maximum Hourly Emission Rate (lbs/hr): 2.18
Predicted 1-Hour Maximum Ground Level Concentration (ug/m3): 1,380
MAGLC (ug/m3): 2,930

Toxic Contaminant: Aliphatic Naphtha
TLV (mg/m3): 423,000
Maximum Hourly Emission Rate (lbs/hr): 3.05
Predicted 1-Hour Maximum Ground Level Concentration (ug/m3): 1,943
MAGLC (ug/m3): 10,071

The permittee, has demonstrated that emissions of the above air toxics, from emissions unit K005, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

(5) Prior to making any physical changes to or changes in the method of operation of the emissions unit, that could impact the parameters or values that were used in the predicted 1-hour "maximum ground level concentration", the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and

c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final PTI prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

(6) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):

a. description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);

b. the Maximum Acceptable Ground Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);

c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground level concentration that demonstrated the emissions unit to be

in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and

d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit or the materials applied.

(7) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

e) Reporting Requirements

(1) The permittee shall submit quarterly written deviation (excursion) reports which include the following information:

a. all monthly records which show that the material usage or composition exceeds the limitations specified in c)(1);

b. all 3-hour blocks of time during which the average temperature of the exhaust gases was more than 50 degrees Fahrenheit below the average temperature during the most recent performance test that demonstrated the until was in compliance;

c. all exceedances of the rolling, 12-month total HAP emission limitations set forth in c)(2) of this permit;

d. all exceedances of the rolling, 12-month individual HAP emission limitations set forth in c)(2) of this permit; and

e. any period of time (start time and date, and end time and date) when the emissions unit was in operation and the process emissions were not vented to the thermal oxidizer.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by April 30, July 31, October 31 and January 31 of each year and shall cover the previous calendar quarter. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that period

(2) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the annual Permit Evaluation Report (PER). If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.

(3) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

(4) The permittee shall identify in the annual permit evaluation report the following information concerning the operations of the thermal oxidizer during the 12-month reporting period for this emissions unit:

a. each period of time (start time and date, and end time and date) when the average combustion temperature within the thermal oxidizer was outside the acceptable range;

b. any period of time (start time and date, and end time and date) when the emissions unit was in operation and the process emissions were not vented to the thermal oxidizer;

c. each incident of deviation described in (4)a. or (4)b. (above) where a prompt investigation was not conducted;

d. each incident of deviation described in (4)a. or (4)b. where prompt corrective action, that would bring the emissions unit into compliance and/or the temperature within the thermal oxidizer into compliance with the acceptable range, was determined to be necessary and was not taken; and

e. each incident of deviation described in (4)a. or (4)b. where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and recordkeeping requirements of this permit.

f) Testing Requirements

(1) Compliance with the following emission limitations shall be determined in accordance with the following method(s):

a. Emission Limitation:

95% destruction efficiency

Applicable Compliance Method:

If required, Methods 1 thru 4 and 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A and the procedures outlined in OAC rule 3745-21-10(C) shall be used to demonstrate compliance. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10(C). The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration of the potential presence of interfering gases.

To convert a mass emission value from VOC as carbon to VOC, divide the mass emission value of VOC as carbon by the weight fraction of carbon in the average molecular weight of the VOC emission. The determination of this weight fraction of carbon may be based on standard analytical techniques or material formulation data.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

b. Emission Limitation:

9.16 lbs/hr OC

Applicable compliance method:

This emission limitation was based on the maximum combined stack and fugitive emissions from ink, fountain solution and cleanup solvent using the calculation method specified in following Ohio EPA Engineering Guide #56 dated June 15, 1999.

Stack emissions, S, (lbs/hr) from the printing process:

$S = (1- DRE)[0.8 (P) + A_d (FS) + B_d (CS)]$

Fugitive emissions, F, (lbs/hr) from printing process are:

$F = A_f(FS) + B_f (CS)$

where:

DRE = destruction or removal efficiency of control device, expressed as a decimal

P = (ink usage, lbs/hr) X (ink VOC content, % by weight)

FS = (fountain solution usage rate, gal/hr) X (fountain solution VOC content, lbs VOC/gal)

CS = (cleanup solvent usage rate, gal/hr) X (cleanup solvent VOC content, lbs VOC/gal)

A_d = mass fraction of fountain solution VOC routed to dryer and control device;
$A_d = 0.7$

B_d = mass fraction of cleanup solvent routed to dryer and control device;
$B_d = 0.0$

A_f = mass fraction of fountain solution VOC emitted as fugitive;
$A_f = 0.3$

B_f = mass fraction of cleanup solvent emitted as fugitive;

B_f = 0.5 (if solvent vapor pressure < 10 mm Hg at 20 deg. C (68 deg. F) and used rags are stored in closed containers)

If required, the permittee shall demonstrate compliance with this emission limitation through the use of the following to be used in the above Engineering Guide #56 calculation:

i. the procedures in f)(1)a. shall be used to determine the actual destruction efficiency;

ii. Method 24 and 24A of 40 CFR Part 60, Appendix A shall be used to determine the VOC content of the ink, fountain solution and cleanup solvent used during the test; and

iii. the actual usage rate of ink, fountain solution and cleanup solvent shall be recorded during the test.

The sum of the hourly stack emissions (as calculated by Engineering Guide #56) shall be added to the hourly fugitive emissions (as calculated by Engineering Guide #56) to obtain the total hourly emissions from this emissions unit.

c. Emission Limitation:

18.32 tons/yr OC

Applicable Compliance Method:

This emission limitation was based on the combined stack and fugitive emissions using the calculation contained in Engineering Guide #56, the operational restrictions contained in c)(1) and the 95% destruction efficiency requirement. Compliance with the Operational Restrictions in c)(1) and the 95% destruction efficiency requirement serves as adequate demonstration of compliance with the annual emission limitation.

d. Emission Limitation:

0.002 pound SO_2 per hour from the dryer

Applicable Compliance Method:

Divide the AP-42 (10/96 Edition) emission factor of 0.6 pounds of SO_2 emissions per million cubic feet by an average natural gas higher heating value of 1,020 Btu per standard cubic feet natural gas and then multiply that product by (1.92 x 2) million Btu per hour (the dryer burner size) or use OAC rule 3745-18-04(F).

e. Emission Limitation:

0.01 ton per year SO_2 from the dryer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations

performed as follows: multiply the short term emission rate of 0.002 pound of SO_2 per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

f. Emission Limitation:

0.02 pound PE per hour from the dryer

Applicable Compliance Method:

Divide the AP-42 (7/98 Edition) emission factor of 1.9 pounds of particulate emissions per million cubic feet by an average natural gas higher heating value of 1,020 Btu per standard cubic feet natural gas and then multiply that product by (1.92 x 2) million Btu per hour (the dryer burner size) or use OAC rule 3745-17-03(B)(9).

g. Emission Limitation:

0.08 ton PE per year

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.02 pound of PE per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

h. Emission Limitation:

0.38 pound NOx per hour from the dryer

Applicable Compliance Method:

Divide the AP-42 (10/96 Edition) emission factor of 100 pounds of NOx emissions per million cubic feet by an average natural gas higher heating value of 1,020 Btu per standard cubic feet natural gas and then multiply that product by (1.92 x 2) million Btu per hour (the dryer burner size) or use Method 7 of 40 CFR Part 60, Appendix A.

i. Emission Limitation:

1.68 tons NOx per year

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.38 pound of NOx per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

j. Emission Limitation:

0.32 pound CO per hour from the dryer

Applicable Compliance Method:

Divide the AP-42 (7/98 Edition) emission factor of 84 pounds of CO emissions per million cubic feet by an average natural gas higher heating value of 1,020 Btu per standard cubic feet natural gas and then multiply that product by (1.92 x 2) million Btu per hour (the dryer burner size) or use Method 10 of 40 CFR Part 60, Appendix A.

k. Emission Limitation:

1.40 ton CO per year from the dryer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.32 pound of CO per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

l. Emission Limitation:

The combined emissions from all emissions units at the facility shall not exceed 9.9 tons per rolling, 12-month period for any single HAP and 24.9 tons per rolling, 12-month period for any combination of HAPs.

Applicable Compliance Method:

The monitoring and record keeping requirements specified in d)(1) shall be used to demonstrate compliance.

m. Emission Limitation:

0.33 pound of CO per hour from thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 84 pounds of CO emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply the result by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4 and 10 of 40 CFR Part 60 Appendix A. Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

n. Emission Limitation:

1.4 tons of CO per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.33 pound of CO per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

o. Emission Limitation:

0.39 pound of NOx per hour from the thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 100 pounds of NOx emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 7 of 40 CFR Part 60 Appendix A. Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

p. Emission Limitation:

1.7 tons of NOx per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.39 pound of NOx per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

q. Emission Limitation:

0.01 pound of PE per hour from the thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 1.9 pounds of PE per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 5 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-17-03(B)(9). Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

r. Emission Limitation:

0.04 ton of PE per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.01 pound of PE per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

s. Emission Limitation:

0.002 pound of SO_2 per hour from the thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 0.6 pounds of SO_2 emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 6 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-18-04. Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

t. Emission Limitation:

0.01 ton of SO_2 per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.002 pound of SO_2 per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

u. Emission Limitation:

0.02 pound of VOC per hour from the thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 5.5 pounds of VOC emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 25 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-21-10. Alternative U.S. EPA-approved test methods may be used with prior written approval from the Ohio EPA.

v. Emission Limitation:

0.09 ton of VOC per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.02 pound of VOC per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

w. Emission Limitation:

5% opacity as a 6-minute average from the thermal oxidizer stack

Applicable Compliance Method:

If required, compliance shall be demonstrated using Method 9 of 40 CFR Part 60, Appendix A.

x. Emission Limitation:

inks, with a maximum OC content of 40% by weight;
fountain solution, with a maximum OC content of 9% by volume; and
clean-up material, with a maximum OC content of 97% by volume

Applicable Compliance Method:

If required, U.S. EPA Methods 24 and 24A shall be used to determine the VOC contents for (a) coatings and (b) flexographic and rotagravure printing inks and related coatings, respectively. If, pursuant to Section 4.3 of Method 24, 40 CFR Part 60, Appendix A, the permittee determines that Method 24 or 24A cannot be used for a particular coating or ink, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating or ink to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24 or 24A.

(2) STACK TESTING
The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted 6 months after issuance of the PTIO and 6 months prior to permit renewal.

b. The emission testing shall be conducted to demonstrate compliance with:

i. the allowable mass emission rate for OC stack emissions from the printing process in pounds per hour;

ii. the VOC content of inks in weight percent and the VOC content of fountain solution and cleanup solvent in pounds per gallon; and

iii. Destruction efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system).

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

i. VOC content: Method 24 and 24A of 40 CFR Part 60, Appendix A for VOC content; Methods 1-4 and 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A for stack emissions and destruction efficiency.

ii. lbs/hr OC: Calculation using the procedures outlined in f)(1)b.

iii. Destruction efficiency: shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10(C). The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Samples shall be taken simultaneously at the inlet and outlet of the vapor control system.

iv. VOC content: U.S. EPA Methods 24 and 24A shall be used to determine the VOC contents for (a) coatings and (b) flexographic and rotagravure printing inks and related coatings, respectively. If, pursuant to Section 4.3 of Method 24, 40 CFR Part 60, Appendix A, the permittee determines that Method 24 or 24A cannot be used for a particular coating or ink, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating or ink to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24 or 24A.

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

f. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency. The test report shall include the average combustion temperature within the thermal oxidizer for each test run.

g) Miscellaneous Requirements

(1) None

3. K007

Operations, Property and/or Equipment Description:

K007 - Line 7, Goss C450 Heatset Offset Web Printing Press and 4.6 mmBtu/hr dryer with regenerative thermal oxidizer for control.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. See d)(3) thru (6) and e)(2).

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. See b)(1)b., b)(2)b., b(2)e., c)(1), c)(2), d)(1), d)(2), e)(1), f)(1)a., f)(1)c., f)(1)e., f)(1)aa., f)(1)bb. and f)(2).

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
Goss C450 Heatset Offset Web Printing Press with a 4.6 mmBtu/hr dryer		
a.	OAC rule 3745-31-05(A)(3) (PTI 04-01235 issued 4/25/2006)	Stack organic compound (OC) emissions shall not exceed 2.4 lbs/hr. Fugitive OC emissions shall not exceed 1.69 lbs/hr. See b)(2)e.
b.	OAC rule 3745-31-05(D) (PTI 04-01235 issued 4/25/2006)	Stack OC emissions shall not exceed 7.19 tons per rolling 12-month period. Fugitive OC emissions shall not exceed 5.1 tons per rolling 12-month period. See b)(2)b.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
Combustion product emissions from 4.6 mmBtu/hr natural gas-fired dryer		
c.	OAC rule 3745-31-05(A)(3) (PTI 04-01235 issued 4/25/2006)	Particulate emissions (PE) shall not exceed 0.01 lb/hr and 0.04 ton/yr Sulfur Dioxide (SO_2) emissions shall not exceed 0.002 lb/hr and 0.01 ton/yr Nitrogen Oxide (NOx) emissions shall not exceed 0.45 lb/hr and 2.0 tons/yr Carbon Monoxide (CO) emissions shall not exceed 0.38 lb/hr and 1.7 tons/yr VOC emissions shall not exceed 0.03 lb/hr and 0.1 ton/yr
d.	OAC rule 3745-17-07(A)(1)	See b)(2)a.
e.	OAC rule 3745-17-11(B)(1)	See b)(2)a.
f.	OAC rule 3745-18-06(A)	Exemption (see b)(2)c.)
g.	OAC rule 3745-21-08(B)	See b)(2)d.
Combustion product emissions from 4.0 mmBtu/hr regenerative thermal oxidizer serving as control for emissions units K002, K005 and K007		
h.	OAC rule 3745-31-05(A)(3) (PTI 04-01235 issued 4/25/2006)	CO emissions shall not exceed 0.33 lb/hr and 1.4 tons/yr NOx emissions shall not exceed 0.39 lb/hr and 1.7 tons/yr PE shall not exceed 0.01 lb/hr and 0.04 ton/yr SO_2 emissions shall not exceed 0.002 lb/hr and 0.01 ton/yr VOC emissions shall not exceed 0.02 lb/hr and 0.09 ton/yr Visible emissions shall not exceed 5% opacity as a 6-minute average.
i.	OAC rule 3745-17-07(A)(1)	See b)(2)a.
j.	OAC rule 3745-17-11(B)(1)	See b)(2)a.
k.	OAC rule 3745-18-06(A)	Exemption (see b)(2)c.)

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
l.	OAC rule 3745-21-08(B)	See b)(2)d.

(2) Additional Terms and Conditions

a. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

b. The combined emissions from all emissions units at this facility shall not exceed 9.9 tons per rolling 12-month period of any individual hazardous air pollutant and 24.9 tons of total hazardous air pollutants per rolling 12-month period.

c. OAC rule 3745-18-06(A) does not establish SO_2 emission limitations for the fuel burning equipment associated with this emissions unit because the emissions unit only employs natural gas as fuel. However, OAC rule 3745-18-06(A) requires that the natural gas being combusted meet certain fuel quality restrictions (a heat content greater than 950 Btu per standard cubic foot and a sulfur content less than 0.6 pound per million standard cubic feet). Because the natural gas being burned in this emission unit is the standard, pipeline quality natural gas supplied to industrial, commercial, and residential users throughout the State, it is assumed that it meets the fuel quality restrictions; and no monitoring, record keeping or reporting requirements are necessary to ensure ongoing compliance with OAC rule 3745-18-06(A).

d. The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by complying with all applicable rules.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

e. Stack emissions shall be vented to a thermal oxidizer with a minimum OC destruction efficiency of 95% and an overall (stack + fugitive) control efficiency of 85%.

c) Operational Restrictions

(1) The maximum annual coating and cleanup material usage for this emissions unit shall not exceed the following levels, based upon a rolling, 12-month summation of the coating and cleanup material usage figures:

Printing inks: 850,000 pounds per year, with a maximum OC content of 42.11% by weight.

Fountain solution: 3,200 gallons per year, with a maximum OC content of 0.54 lbs/gal.

Clean-up material: 2,900 gallons per year, with a maximum OC content of 6.6 lbs/gal.

Compliance with the annual coating usage limitation shall be based upon a rolling, 12-month summation of the coating and cleanup material usage figures.

(2) The individual HAP and total HAP, combined, emission rates for all emissions units at the facility shall not exceed 9.9 and 24.9 tons per year, respectively, based upon a rolling, 12-month summation of emission rates. Compliance with the individual HAP and total HAP, combined, emission limitations for all emissions units at the facility shall be based upon a rolling, 12-month summation of the monthly usage emission figures

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall collect and record the following information for each month for the coating operation:

a. The company identification for each material employed (i.e.printing ink, fountain solution, clean-up material);

b. the number of pounds of each ink employed, and the number of gallons of fountain solution and cleanup material employed;

c. the organic compound content of each ink in percent by weight and of each fountain solution and cleanup material, in pounds per gallon;

d. the total combined organic compound emission rate in pounds per month for stack and fugitive emissions based on actual material usage recorded under d)(1)c. and d)(1)d. and using the calculation methods outlined in f)(1)b. and f)(1)d.;

e. the total controlled organic compound emission for stack and fugitive emissions per rolling 12-month period;

f. the total HAP content of each ink employed in percent by weight and of each fountain solution and cleanup material employed in pounds per gallon;

g. the individual HAP content of each ink in percent by weight and of each fountain solution and cleanup material in pounds per gallon;

h. the rolling, 12-month summation of total HAP emissions from all emissions units located at this facility, in tons; and

i. the rolling, 12-month summation of individual HAP emissions from all emissions units located at this facility, in tons.

[Note: The coating information must be for the coatings as employed, including any thinning solvents added at the emissions unit.

(2) The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal

incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day for the control equipment:

a. a log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit; and

b. all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated that the emissions unit was in compliance. There are a total of eight 3-hour blocks of time during each day.

(3) AIR TOXICS POLICY

The Permit to Install (PTI) application for this emissions unit, K007, was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee. The “Toxic Air Contaminant Statute”, ORC 3704.03(F), was applied to this emissions unit for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground level concentration result from the approved air dispersion model, was compared to the Maximum Acceptable Ground Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled “Review of New Sources of Air Toxic Emissions, Option A”, as follows:

a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):

   i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists’ (ACGIH) “Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices”; or

   ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists’ (ACGIH) “Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices”; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.

b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).

c. This standard was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit, i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

TLV/10 x 8/X x 5/Y = 4 TLV/XY = MAGLC

d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant:

Toxic Contaminant: Aliphatic Solvent Naptha
TLV (mg/m3): 572.6 (stoddard solvent)
Maximum Hourly Emission Rate (lbs/hr): 1.2
Predicted 1-Hour Maximum Ground Level Concentration (ug/m3): 11.25
MAGLC (ug/m3): 13,600

The permittee, has demonstrated that emissions of Aliphatic Solvent Naptha, from emissions unit K007, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

(4) Prior to making any physical changes to or changes in the method of operation of the emissions unit, that could impact the parameters or values that were used in the predicted 1-hour "maximum ground level concentration", the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and

c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final PTI prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level

concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

(5) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):

a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);

b. the Maximum Acceptable Ground Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);

c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground level concentration that demonstrated the emissions unit to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and

d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit or the materials applied.

(6) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

e) Reporting Requirements

(1) The permittee shall submit quarterly written deviation (excursion) reports which include the following information:

a. all monthly records which show that the material usage or composition exceeds the limitations specified in c)(1);

b. all 3-hour blocks of time during which the average temperature of the exhaust gases was more than 50 degrees Fahrenheit below the average temperature during the most recent performance test that demonstrated the unit was in compliance;

c. all exceedances of the rolling, 12-month total HAP emission limitation set forth in c)(2) of this permit;

d. all exceedances of the rolling, 12-month individual HAP emission limitation set forth in c)(2) of this permit; and

e. any period of time (start time and date, and end time and date) when the emissions unit was in operation and the process emissions were not vented to the thermal oxidizer.

These reports shall be submitted to the Toledo Division of Environmental Services by April 30, July 31, October 31 and January 31 of each year and shall cover the previous calendar quarter. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that period

(2) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the annual Permit Evaluation Report (PER). If no changes to the emissions, emissions unit, or the exhaust stack have been made, then the report shall include a statement to this effect.

(3) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

(4) The permittee shall identify in the annual permit evaluation report the following information concerning the operations of the thermal oxidizer during the 12-month reporting period for this emissions unit:

a. each period of time (start time and date, and end time and date) when the average combustion temperature within the thermal oxidizer was outside the acceptable range;

b. any period of time (start time and date, and end time and date) when the emissions unit was in operation and the process emissions were not vented to the thermal oxidizer;

c. each incident of deviation described in (4)a. or (4)b. (above) where a prompt investigation was not conducted;

d. each incident of deviation described in (4)a. or (4)b. where prompt corrective action, that would bring the emissions unit into compliance and/or the temperature within the thermal oxidizer into compliance with the acceptable range, was determined to be necessary and was not taken; and

e. each incident of deviation described in (4)a. or (4)b. where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and recordkeeping requirements of this permit.

f) Testing Requirements

(1) Compliance with the emission limitation(s) in b)(1) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

The combined emissions from all emissions units at the facility shall not exceed 9.9 tons per rolling, 12-month period for any single HAP and 24.9 tons per rolling, 12-month period for any combination of HAPs.

Applicable Compliance Method:

The monitoring and recordkeeping requirement in d)(1) will be used to demonstrate compliance.

b. Emission Limitation:

Stack OC emissions shall not exceed 2.4 pounds per hour.

Applicable Compliance Method:

Compliance with the hourly emission rate may be demonstrated by the following calculation from Ohio EPA Engineering Guide #56.

Stack emissions, S, (lbs/hr) from the printing process:

$S = (1- DRE)[0.8 (P) + A_d (FS) + B_d (CS)]$

where:

DRE = destruction or removal efficiency of control device, expressed as a decimal = 0.95

P = (ink usage, lbs/hr) X (ink VOC content, % by weight)
P = (850,000 lb/6000 hr)(0.4211) = 59.66 lb VOC/hr
Maximum hourly usage is based on maximum annual usage divided by 6000 hours per year of operation.

FS = (fountain solution usage rate, gal/hr) X (fountain solution VOC content, lbs VOC/gal)
FS = (3200 gal/6000 hr)(0.54) = 0.29 lb VOC/hr
Maximum hourly usage is based on maximum annual usage divided by 6000 hours per year of operation.

CS = (cleanup solvent usage rate, gal/hr) X (cleanup solvent VOC content, lbs VOC/gal)
CS = (2900 gal/6000 hr)(6.60 lb/gal) = 3.2 lb VOC/hr

Maximum hourly usage is based on maximum annual usage divided by 6000 hours per year of operation.

A_d = mass fraction of fountain solution VOC routed to dryer and control device;
$A_d = 0.7$

B_d = mass fraction of cleanup solvent routed to dryer and control device;
$B_d = 0.0$

Then:
S = (1-0.95)[0.8(59.66) + 0.7(0.29) + 0.0(3.2)] = 2.4 lb VOC/hr

If required, the permittee shall demonstrate compliance with the lb/hr emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 25 or 25A, as appropriate. Compliance is demonstrated if the actual emissions rate from all emissions units during the test is less than the combined allowable emissions from all emissions units in operation during the test. Alternative U.S. EPA approved test methods may be used with prior written approval from Ohio EPA.

c. Emission Limitation:

Stack OC emissions from the printing process shall not exceed 7.19 tons per rolling 12-month period

Applicable Compliance Method:

The annual OC emission limitation is based on the operational restrictions contained in c)(1). Compliance with the hourly emission limitation and the operational restrictions contained in c)(1) shall serve as demonstration of compliance with the annual emission limitation.

d. Emission Limitation:

Fugitive OC emissions shall not exceed 1.69 lbs per hour

Applicable Compliance Method:

Compliance with the hourly emission rate may be demonstrated by the following calculation from Ohio EPA Engineering Guide #56.

Fugitive emissions, F, (lbs/hr) from printing process are:

$F = A_f(FS) + Bf\ (CS)$

where:

FS = (fountain solution usage rate, gal/hr) X (fountain solution VOC content, lbs VOC/gal)
FS = (3200 gal/6000 hr)(0.54) = 0.29 lb VOC/hr

CS = (cleanup solvent usage rate, gal/hr) X (cleanup solvent VOC content, lbs VOC/gal)
CS = (2900 gal/6000 hr)(6.60 lb/gal) = 3.2 lb VOC/hr

A_f = mass fraction of fountain solution VOC emitted as fugitive;
A_f = 0.3

B_f = mass fraction of cleanup solvent emitted as fugitive;
B_f = 0.5 (if solvent vapor pressure < 10 mm Hg at 20 deg. C (68 deg. F) and used rags are stored in closed containers)

Then:
F = 0.3(0.29) + 0.5(3.2) = 1.69 lb VOC/hr

e. Emission Limitation:

Fugitive OC emissions shall not exceed 5.1 tons/yr

Applicable Compliance Method:

The annual OC emission limitation is based on the hourly emission limitation (1.69 lbs/hr) multiplied by 6,000 hours per year and divided by 2000 pounds per ton. The operational restrictions contained in c)(1) are based on the maximum hourly usage rates for 6,000 hours per year. Compliance with the usage restrictions in c)(1) and the destruction efficiency in b)(2)g. shall serve as demonstration of compliance with the annual emission limitation.

f. Emission Limitation:

0.38 pound of CO per hour from the dryer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 84 pounds of CO emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply the result by the maximum heat input capacity of 4.6 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4 and 10 of 40 CFR Part 60 Appendix A. Alternative U.S. EPA approved test methods may be used with prior written approval from the Ohio EPA.

g. Emission Limitation:

1.7 tons of CO per year from the dryer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.38 pound of CO per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

h. Emission Limitation:

0.45 pound of NOx per hour from the dryer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air

Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 100 pounds of NOx emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4.6 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 7 of 40 CFR Part 60 Appendix A. Alternative U.S. EPA approved test methods may be used with prior written approval from the Ohio EPA.

i. Emission Limitation:

2.0 tons of NOx per year from the dryer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.45 pound of NOx per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

j. Emission Limitation:

0.01 pound of PE per hour from the dryer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 1.9 pounds of PE per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4.6 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 5 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-17-03(B)(9). Alternative U.S. EPA approved test methods may be used with prior written approval from the Ohio EPA.

k. Emission Limitation:

0.04 ton of PE per year from the dryer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.01 pound of PE per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

l. Emission Limitation:

0.002 pound of SO_2 per hour from the dryer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 0.6 pounds of SO_2 emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4.6 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 6 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-18-04. Alternative U.S. EPA approved test methods may be used with prior written approval from the Ohio EPA.

m. Emission Limitation:

0.01 ton of SO_2 per year from the dryer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.002 pound of SO_2 per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

n. Emission Limitation:

0.03 pound of VOC per hour from the dryer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 5.5 pounds of VOC emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4.6 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 25 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-21-10. Alternative U.S. EPA approved test methods may be used with prior written approval from the Ohio EPA.

o. Emission Limitation:

0.1 ton of VOC per year from the dryer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.03 pound of VOC per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

p. Emission Limitation:

0.33 pound of CO per hour from thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 84 pounds of CO emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply the result by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4 and 10 of 40 CFR Part 60 Appendix A. Alternative U.S. EPA approved test methods may be used with prior written approval from the Ohio EPA.

q. Emission Limitation:

1.4 tons of CO per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.33 pound of CO per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

r. Emission Limitation:

0.39 pound of NOx per hour from the thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 100 pounds of NOx emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 7 of 40 CFR Part 60 Appendix A. Alternative U.S. EPA approved test methods may be used with prior written approval from the Ohio EPA.

s. Emission Limitation:

1.7 tons of NOx per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.39 pound of NOx per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

t. Emission Limitation:

0.01 pound of PE per hour from the thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 1.9 pounds of PE per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 5 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-17-03(B)(9). Alternative U.S. EPA approved test methods may be used with prior written approval from the Ohio EPA.

u. Emission Limitation:

0.04 ton of PE per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.01 pound of PE per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

v. Emission Limitation:

0.002 pound of SO_2 per hour from the thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 0.6 pounds of SO_2 emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 6 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-18-04. Alternative U.S. EPA approved test methods may be used with prior written approval from the Ohio EPA.

w. Emission Limitation:

0.01 ton of SO_2 per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.002 pound of SO_2 per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

x. Emission Limitation:

0.02 pound of VOC per hour from the thermal oxidizer

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 5.5 pounds of VOC emissions per million standard cubic feet by a heating value of 1,020 Btus per standard cubic foot and multiply by the maximum heat input capacity of 4 mmBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 thru 4 and 25 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-21-10. Alternative U.S. EPA approved test methods may be used with prior written approval from the Ohio EPA.

y. Emission Limitation:

0.09 ton of VOC per year from the thermal oxidizer

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.02 pound of VOC per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

z. Emission Limitation:

Stack emissions from the printing process shall be vented to a thermal oxidizer with a minimum OC destruction efficiency of 95%.

Applicable Compliance Method:

If required, the control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in 3745-21-10 or an alternative test protocol approved by the Ohio EPA. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Samples shall be taken simultaneously at the inlet and outlet of the vapor control system.

aa. Emission Limitation:

85 % minimum overall (stack + fugitive) control efficiency

Applicable Compliance Method:

Compliance shall be determined through the following material balance calculation: Subtract the controlled emissions rate from the uncontrolled emission rate. Divide this difference by the uncontrolled emission rate and multiply by 100%.

The maximum uncontrolled organic compound emission rate is the sum of the maximum ink, fountain solution and cleanup solvent usage rates [(850,000 lb/yr x 0.4211 / 6,000 hr/yr) + (3,200 gal/yr x 0.54 lb/gal / 6,000 hr/yr) + (2,900 gal/yr x 6.6 lb/gal / 6,000 hr/yr) = 63.13 lb/hr].

The maximum controlled emission rate is the sum of the maximum hourly stack emissions and fugitive emissions [2.4 lb/hr + 1.69 lb/hr = 4.09 lb/hr].

(63.13 lb/hr - 4.09 lb/hr) / (63.13 lb/hr) x 100% = 94%

bb. Emission Limitation:

inks, with a maximum OC content of 42.11% by weight;
fountain solution, with a maximum OC content of 0.54 lbs/gal; and
clean-up material, with a maximum OC content of 6.6 lbs/gal

Applicable Compliance Method:

If required, U.S. EPA Methods 24 and 24A shall be used to determine the VOC contents for (a) coatings and (b) flexographic and rotagravure printing inks and related coatings, respectively. If, pursuant to Section 4.3 of Method 24, 40 CFR Part 60, Appendix A, the permittee determines that Method 24 or 24A cannot be used for a particular coating or ink, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating or ink to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24 or 24A.

cc. Emission Limitation:

5% opacity as a 6-minute average from the thermal oxidizer stack

Applicable Compliance Method:

If required, compliance shall be demonstrated using Method 9 of 40 CFR Part 60, Appendix A.

(2) Stack Testing Requirements

The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted 6 months after issuance of the PTIO and 6 months prior to permit renewal.

b. The emission testing shall be conducted to demonstrate compliance with:

i. the allowable mass emission rate for OC stack emissions from the printing process in pounds per hour;

ii. the VOC content of inks in weight percent and the VOC content of fountain solution and cleanup solvent in pounds per gallon; and

iii. destruction efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system).

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

i. VOC content: Method 24 and 24A of 40 CFR Part 60, Appendix A for VOC content; Methods 1-4 and 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A for stack emissions and destruction efficiency.

ii. lbs/hr OC: Calculation using method described in f)(1)b.

iii. destruction efficiency: shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10(C) or an alternative test protocol approved by the Ohio EPA. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Samples shall be taken simultaneously at the inlet and outlet of the vapor control system.

iv. VOC content: U.S. EPA Methods 24 and 24A shall be used to determine the VOC contents for (a) coatings and (b) flexographic and rotagravure printing inks and related coatings, respectively. If, pursuant to Section 4.3 of Method 24, 40 CFR Part 60, Appendix A, the permittee determines that Method 24 or 24A cannot be used for a particular coating or ink, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating or ink to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24 or 24A.

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

f. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency. The test report shall include the average combustion temperature within the thermal oxidizer for each test run.

g) Miscellaneous Requirements

(1) None.