John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

9/10/2013

Certified Mail

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
No	MODELING SUBMITTED
Yes	SYNTHETIC MINOR TO AVOID TITLE V
Yes	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Mr. Glenn Shaffer
Quad/Graphics Marketing LLC
2901 Blackbridge Road
York, PA 17406

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 0125041807
Permit Number: P0115259
Permit Type: OAC Chapter 3745-31 Modification
County: Franklin

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install and Operate (PTIO)for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the permit. A public notice will appear in the Ohio Environmental Protection Agency (EPA) Weekly Review and the local newspaper, The Columbus Dispatch. A copy of the public notice and the draft permit are enclosed. This permit can be accessed electronically on the Division of Air Pollution Control (DAPC) Web page,www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall
Permit Review/Development Section
Ohio EPA, DAPC
122 South Front Street
Columbus, Ohio 43215

and

Ohio EPA DAPC, Central District Office
50 West Town Street, 6th Floor
P.O. Box 1049
Columbus, OH 43216-1049

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified if a public hearing is scheduled. A decision on issuing a final permit-to-install will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Ohio EPA DAPC, Central District Office at (614)728-3778.

Sincerely,

Michael W. Ahern

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

Cc: U.S. EPA Region 5 *Via E-Mail Notification*
Ohio EPA-CDO

PUBLIC NOTICE
9/10/2013 Issuance of Draft Air Pollution Permit-To-Install and Operate

Quad/Graphics Marketing LLC
4051 FONDORF DR,
Columbus, OH 43228
Franklin County

FACILITY DESC.:	Commercial Lithographic Printing
PERMIT #:	P0115259
PERMIT TYPE:	OAC Chapter 3745-31 Modification
PERMIT DESC:	Chapter 31 modification to increase the VOC content of the ink for all nine presses and the fountain solution for seven presses.

The Director of the Ohio Environmental Protection Agency issued the draft permit above. The permit and complete instructions for requesting information or submitting comments may be obtained at: http://epa.ohio.gov/dapc/permitsonline.aspx by entering the permit # or: Pamela McCoy, Ohio EPA DAPC, Central District Office, 50 West Town Street, 6th Floor P.O. Box 1049, Columbus, OH 43216-1049. Ph: (614)728-3778

Permit Strategy Write-Up

1. Check all that apply:

   _X_ Synthetic Minor Determination

   Netting Determination

2. Source Description:

   Quad/Graphics Marketing LLC. (Quad) is permitted to operate nine web offset lithographic printing presses at their Columbus, Ohio facility. Quad has submitted an application to increase the VOC content of the ink for all nine presses and the fountain solution for seven presses.

3. Facility Emissions and Attainment Status:

   Quad/Graphics Marketing LLC is located in Franklin County which is currently non-attainment for ozone and PM2.5. For all other criteria air pollutants, Franklin County is attainment. Quad/Graphics Marketing LLC. operates under a synthetic minor to avoid Title V. Facility-wide emissions are limited to 99 tons per year of VOC, 9.9 tons per year of individual HAP, and 24.9 tons per year of combined HAPs by restricting the facility-wide use of heatset ink, fountain solution, blanket wash, and natural gas and maintaininga 95% minimum VOC destruction efficiency on the control equipment.

4. Source Emissions:

   The nine web offset lithographic printing presses are the source of particulate, VOC and HAP emissions from printing operations in addition to products of combustion from burning natural gas in the associated dryers and ink oils in the control equipment. VOC emissions from the burning of natural gas and ink oils are negligible.

   The maximum ink, fountain solution, and blanket wash usage was provided by the facility. The maximum hourly usage for each press was determined assuming maximum coverage on the widest web by each printing unit. This provides a pound per hour emission rate that far exceeds the actual emissions and is virtually impossible for the units to exceed. The maximum annual press usage for each press are less than the short term multiplied by 8,760 hr/yr; however, they are more than double the maximum used. In addition, many factors were considered including ink coverage (typically 10-70%), speed of press, web width, ratio of dry time to ink usage (more ink = slower dry time), that plates must be changed periodically, paper breaks, cleaning time of ink piling, product changes and order changes. Each of these factors was considered and the annual usage and emission rates were considered to be the absolute maximum for each unit.

   Quad has requested to increase ink VOC content for all sources from 43% to 44% and to increase fountain solution VOC content for K001, K002, K003, K006, K008, K010 and K011 from 0.99 lb/gal to 1.10 lb/gal. Additionally, Quad has requested to reduce their facility-wide limitations on ink, fountain solution and blanket wash throughput to remain under Title V thresholds.

   Facility-wide emissions were calculated using the following information.

   Natural Gas usage = 150 MMcf/yr (permit application)

   Inks-

Maximum heatset ink VOC content = 44% (permit application)
Retention in web = 20%*
Maximum Ink Usage = 8,000,000 lb/yr (permit application)

Fountain Solution (fs)-
Maximum fs VOC content = 1.10 lb/gal (permit application)
Capture efficiency (to stack) = 70%*
Capture efficiency (fugitive) = 30%*
Maximum fs Usage = 70,000 gal/yr (permit application)

Blanket Wash (bw) (Manual and Automatic)-
Manual and Automatic bw VOC content = 2.17 lb/gal (permit application)
Manual bw fugitive emissions = 50%*
Automatic bw (to stack) = 40%*
Automatic bw (fugitive) = 60%*
Max Automatic bw usage = 5,000 gal/yr (permit application)
Max Manual bw usage = 11,500 gal/yr (permit application)

Minimum VOC Destruction Efficiency = 95% (Verified by stack tests on 12/06/06 and 8/6/13)

* EPA-453/R-06-002, Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing, September 2006

5. Conclusion:

The issuance of P0115259 is recommended. The facility-wide operational restrictions, monitoring/recordkeeping requirements, reporting requirements and testing requirements contained in this permit are adequate to provide federally enforceable limitations to ensure that the applicable thresholds will not be exceeded.

6. Please provide additional notes or comments as necessary:

None

7. Total Permit Allowable Emissions Summary (for informational purposes only):

Pollutant	Tons Per Year
CO	8.44
NOx	17.01
SO_2	0.04
PM/PM10/PM2.5	2.28
VOC	99
Individual HAP	9.9
Combined HAPs	24.9

DRAFT

Division of Air Pollution Control
Permit-to-Install and Operate
for
Quad/Graphics Marketing LLC

Facility ID:	0125041807
Permit Number:	P0115259
Permit Type:	OAC Chapter 3745-31 Modification
Issued:	9/10/2013
Effective:	To be entered upon final issuance
Expiration:	To be entered upon final issuance

Division of Air Pollution Control
Permit-to-Install and Operate
for
Quad/Graphics Marketing LLC

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Authorization

Facility ID:	0125041807
Application Number(s):	A0048378
Permit Number:	P0115259
Permit Description:	Chapter 31 modification to increase the VOC content of the ink for all nine presses and the fountain solution for seven presses.
Permit Type:	OAC Chapter 3745-31 Modification
Permit Fee:	$2,400.00 *DO NOT send payment at this time, subject to change before final issuance*
Issue Date:	9/10/2013
Effective Date:	To be entered upon final issuance
Expiration Date:	To be entered upon final issuance
Permit Evaluation Report (PER) Annual Date:	To be entered upon final issuance

This document constitutes issuance to:

Quad/Graphics Marketing LLC
4051 FONDORF DR
Columbus, OH 43228

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

Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Central District Office
50 West Town Street, 6th Floor
P.O. Box 1049
Columbus, OH 43216-1049
(614)728-3778

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

Scott J. Nally
Director

Authorization (continued)

Permit Number: P0115259
Permit Description: Chapter 31 modification to increase the VOC content of the ink for all nine presses and the fountain solution for seven presses.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Emissions Unit ID:	**K001**
Company Equipment ID:	954-1
Superseded Permit Number:	P0104236
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**K002**
Company Equipment ID:	908
Superseded Permit Number:	P0104236
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**K003**
Company Equipment ID:	904
Superseded Permit Number:	P0104236
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**K006**
Company Equipment ID:	954-2
Superseded Permit Number:	P0104236
General Permit Category and Type:	Not Applicable

Group Name: 4-Unit C-500

Emissions Unit ID:	**K015**
Company Equipment ID:	5007
Superseded Permit Number:	P0112687
General Permit Category andType:	Not Applicable
Emissions Unit ID:	**K016**
Company Equipment ID:	5008
Superseded Permit Number:	P0112687
General Permit Category andType:	Not Applicable

Group Name: 4-Unit C-700

Emissions Unit ID:	**K008**
Company Equipment ID:	701
Superseded Permit Number:	P0104236
General Permit Category andType:	Not Applicable
Emissions Unit ID:	**K010**
Company Equipment ID:	702
Superseded Permit Number:	P0104236
General Permit Category andType:	Not Applicable
Emissions Unit ID:	**K011**
Company Equipment ID:	703
Superseded Permit Number:	P0104236
General Permit Category andType:	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. Unless otherwise specified, facilities subject to one or more synthetic minor restrictions must use Ohio EPA's "Air Services" to submit annual emissions associated with this permit requirement.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 Ohio EPA DAPC, Central District Office 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[1] 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 emissions 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.

[1] Permittees that use Ohio EPA's "Air Services" can mark the affected emissions unit(s) as "permanently shutdown" in the facility profile along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).

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) 2., 3., 4., 5. and 6.

2. Applicable Emissions Limitations and/or Control Requirements

   a) The specific operations, property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and applicable emissions limitations and/or control measures are set forth below. 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
OAC rule 3745-31-05(D) (Federally enforceable limitations to avoid Title V)	See b)(1), b)(2), b)(3) and 3. below.

   b) This permit establishes the following federally enforceable limitations on emissions of volatile organic compounds (VOC) and hazardous air pollutants (HAPs), as identified in Section 112(b) of Title III of theClean Air Act, for the purpose of avoiding Title V permitting requirements:

      (1) The emissions from all stacks associated with emissions units at this facility, including but not limited to any de minimis emissions units as defined in OAC rule 3745-15-05, or any registration status and/or permit exempt/permit-by-rule emissions units pursuant to OAC rule 3745-31-03, combined, shall not exceed 9.9 tons for any single HAP, based upon a rolling, 12-month summation.

      (2) The emissions from all stacks associated with emissions units at this facility, including but not limited to any de minimis emissions units as defined in OAC rule 3745-15-05, or any registration status and/or permit exempt/permit-by-rule emissions units pursuant to OAC rule 3745-31-03, combined, shall not exceed 24.9 tons for total combined HAPs, based upon a rolling, 12-month summation.

      (3) The VOC emissions from all stacks associated with emissions units at this facility, including but not limited to any de minimis emissions units as defined in OAC rule 3745-15-05, or any registration status and/or permit exempt/permit-by-rule emissions units pursuant to OAC rule 3745-31-03, combined, shall not exceed 99 tons per year, based upon a rolling, 12-month summation.

3. Operational Restrictions

a) The following annual usage limitations shall not be exceeded for emission units K001, K002, K003, K006, K008, K010, K011, K015 and K016 combined, based upon a rolling, 12-month summation.

Material:	Limitation:
Heatset ink	8,000,000 pounds
Heatset Fountain Solution	70,000 gallons
Automatic Blanket Wash	5,000 gallons
Manual Blanket Wash	11,500 gallons

b) The facility-wide natural gas usage shall not exceed 150 million cubic feet per year, based upon a rolling, 12-month summation.

c) Emission units K001, K002, K003, K006, K008, K010, K011, K015 and K016 shall not use a heat-set ink with a VOC content greater than 44% by weight, a fountain solution with a VOC content greater than 1.10 lb/gal, or a blanket wash (manual or automatic) with a VOC content greater than 2.17 lb/gal.

d) The permittee shall burn only natural gas.

e) Emissions from emissions units K001, K002, K003, K006, K008, K010, K011, K015 and K016 shall be vented to twoRTOs connected in parallel or a thermal afterburner with a destruction removal efficiency (DRE) of at least 95%.

4. Monitoring and/or Recordkeeping Requirements

a) The permittee shall maintain monthly records of the following:

(1) For emissions units K001, K002, K003, K006, K008, K010, K011, K015 and K016:

a. the company identification for each ink, fountain solution and blanket wash employed;

b. the total number of pounds of each heatset ink employed;

c. the total number of gallons of each heatset fountain solution, automatic blanket wash and manual blanket wash employed;

d. the VOC content of each ink, in percent by weight;

e. the individual HAP content of each ink, in percent by weight;

f. the combined HAP content of each ink, in percent by weight;

g. the VOC content of each fountain solution and blanket wash, in pounds per gallon;

h. the individual HAP content of each fountain solution and blanket wash, in pounds per gallon;

i. the combined HAP content of each fountain solution and blanket wash, in pounds per gallon;

j. the RTOs'/thermal afterburner's DRE (%), as demonstrated during the most recent DRE test that demonstrated compliance;

k. the total monthly VOC, single HAP and combined HAPs stack emissions for all inks, fountain solutions and blanket washes, in pounds and tons, using the following equations;

VOC from heatset inks: [b x dx substrate retention factor (1.0-0.20) x (1.0-j)]

VOC from heatset captured fountain solution: [c x g x cap. eff. (1-0.30) x (1.0-j)]

VOC from captured automatic blanket wash: [c x g x cap. eff. (1-0.6) x (1.0-j)]

VOC from manual blanket wash: [c x g x retention factor (1.0-0.5)]

HAP from heatset inks: [b x e x substrate retention factor (1.0-0.20) x (1.0-j)]

HAP from heatset captured fountain solution: [c x h x cap. eff. (1-0.30) x (1.0-j)]

HAP from captured automatic blanket wash: [c x h x cap. eff. (1-0.6) x (1.0-j)]

HAP from manual blanket wash: [c x h x retention factor (1.0-0.5)]

HAPs from heatset inks: [b x f x substrate retention factor (1.0-0.20) x (1.0-j)]

HAPs from heatset captured fountain solution: [c x i x cap. eff. (1-0.30) x (1.0-j)]

HAPs from captured automatic blanket wash: [c x i x cap. eff. (1-0.6) x (1.0-j)]

HAPs from manual blanket wash: [c x i x retention factor (1.0-0.5)]

l. the total cumulative rolling, 12-month usage summation of all heatset inks (in pounds), heatset fountain solutions (in gallons), automatic blanket washes (in gallons) and manual blanket washes (in gallons);

(2) the total number of cubic feet of natural gas used facility-wide;

(3) the cumulative rolling, 12-month usage summation of total cubic feet of natural gas used facility-wide;

(4) the cumulative rolling, 12-month summation of the VOC, individual HAP and combined HAPs emissions from the stacks of all emissions units at this facility, including any de minimis emissions units as defined in OAC rule 3745-15-05, any registration status and/or permit exempt/permit-by-rule emissions units pursuant to OAC rule 3745-31-03, in tons.

[Note: The recorded information must be for the inks, fountain solutions and blanket washes as employed, including any thinning solvents added at the emissions unit.]

b) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned.

c) For emissions units K001, K002, K003, K006, K008, K010, K011, K015 and K016, the permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the RTOs/thermal afterburner 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 calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

d) For emissions units K001, K002, K003, K006, K008, K010, K011, K015 and K016, the permittee shall collect and record the following information each day:

(1) all 3-hour blocks of time during which the combustion temperature within the RTOs/thermal afterburner, when the emissions unit was in operation, dropped below 1400 degrees Fahrenheit; and

(2) a log of the downtime for the capture (collection) system, all control devices, and all monitoring equipment, when the associated emissions unit was in operation.

5. Reporting Requirements

a) Unless other arrangements have been approved by the director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

b) The permittee shall submit quarterly deviation (excursion) reports that identify:

(1) all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

a. all exceedances of the rolling, 12-month VOC, single HAP and combined HAPs emission limitations;

b. all exceedances of the rolling, 12-month summation of inks, fountain solutions and blanket washes for emission units K001, K002, K003, K006, K008, K010, K011, K015 and K016;

c. all exceedances of the rolling, 12-month summation of facility-wide natural gas usage;

d. all exceedances of the VOC content limitations for ink, in percent by weight, fountain solution and blanket wash, in pounds per gallon;

e. all days during which the permittee burned a fuel other than natural gas;

f. all 3-hour blocks of times during which the average combustion temperature within the RTOs/thermal afterburner does not comply with the temperature limitation specified above; and

g. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emission unit was in operation.

(2) the probable cause of each deviation (excursion);

(3) any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and

(4) the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the Central District Office).

6. Testing Requirements

a) Compliance with the emission limitations specified in Section 2. above shall be determined in accordance with the following methods:

(1) <u>Emissions Limitations</u>

The emissions from all stacks associated with emissions units at this facility, including but not limited to any de minimis emissions units as defined in OAC rule 3745-15-05, or any registration status and/or permit exempt/permit-by-rule emissions units pursuant to OAC rule 3745-31-03, combined, shall not exceed 9.9 tons for any single HAP and 24.9 tons for total combined HAPs, based upon a rolling, 12-month summation..

<u>Applicable Compliance Method</u>

The permittee shall calculate HAP emissions from all facility stacks in accordance with the recordkeeping requirements specified in Section 4. above, using U.S. EPA approved emissions factors or emissions factors otherwise approved by Ohio EPA, Central District Office.

(2) <u>Emissions Limitation</u>

The VOC emissions from all stacks associated with emissions units at this facility, including but not limited to any de minimis emissions units as defined in OAC rule 3745-15-05, or any registration status and/or permit exempt/permit-by-rule emissions units pursuant to OAC rule 3745-31-03, combined, shall not exceed 99 tons per year, based upon a rolling, 12-month summation.

Applicable Compliance Method

The permittee shall calculate VOC emissions from all facility stacks in accordance with the recordkeeping requirements specified in Section 4. above, using U.S. EPA approved emissions factors or emissions factors otherwise approved by Ohio EPA, Central District Office.

C. Emissions Unit Terms and Conditions

1. K001, 954-1

Operations, Property and/or Equipment Description:

8 Unit Harris N954 heatset web offset lithographic printing press (954-1) and dryer controlled by two Langbein-Engelbracht 20,000 acfm regenerative thermal oxidizers (RTOs) operating in tandem.

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. b)(1)i., d)(1) through d)(4) and e)(3)

(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. b)(1)g.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(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 are identified below. 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
a.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.
b.	OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 lb/MMBtu of actual heat input from any indirect-fired oven zone associated with this emissions unit.
c.	OAC rule 3745-17-11(B)(1)	Particulate emissions (PE) shall not exceed 2.9 pounds per hour, based upon Table I of OAC rule 3745-17-11.
d.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	Emissions from the combustion of natural gas in the dryer(s) and ink oils in the RTOs associated with this emissions unit shall not exceed:

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		0.22 pound of PE per hour; 0.01 pound of SO_2 per hour; 2.49 pounds of NOx per hour; and 1.25 pounds of CO per hour. See b)(2)a. and b)(2)c. below.
e.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/01/06	See b)(2)b. below.
f.	ORC 3704.03(T)	See b)(2)d. and b)(2)e. below.
g.	OAC rule 3745-31-05(D) (Federally enforceable limitations to avoid Title V)	See Facility-Wide Terms and Conditions.
h.	OAC rule 3745-31-05(F), as effective 12/01/06 (to avoid BAT requirements)	See b)(2)b.ii. and b)(2)b.iii. below.
i.	ORC 3704.03(F)(3)(c) and F(4) (Toxic air contaminant statute)	See d)(1) through d)(4) below.

(2) Additional Terms and Conditions

a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by 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 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limitations/control measures no longer apply.

b. The following rule paragraphs will apply once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan:

i. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE, SO_2, and CO emissions from this air contaminant source since the potentials to emit are less than 10 tons per year.

ii. The permittee has agreed to voluntarily limit the NOx emissions from this emission unit to less than10 tons per year for the purpose of avoiding BAT requirements under OAC rule 3745-31-05(A)(3).

iii. The permittee shall maintain monthly records of NOx emissions from this emissions unit for purposes of determining compliance with the voluntary annual NOx emission limitation.

c. The hourly PE, SO_2, NOx and CO emission limitationswere established to reflect the potential to emit for this emissions unitin accordance with the information provided in the application. It is not necessary to develop monitoring, recordkeeping and/or reporting requirements to ensure compliance with these limitations.

d. Emissions from this emissions unit shall be vented to two RTOs connected in parallel with a destruction removal efficiency (DRE) of at least 95%.

e. The DRE specified by this rule is equivalent to the DRE established pursuant to OAC rule 3745-31-05(D). The monitoring and recordkeeping requirements established in the Facility-Wide Terms and Conditions for theRTOs are sufficient to ensure compliance with this limitation.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) The FEPTIO application for this/these emissions unit(s), K001 and K002, were evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) 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(s) 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 is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "24" hours per day and "7" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4\ TLV/XY = MAGLC$$

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(s):

Toxic Contaminant: Glycol Ether
TLV (mg/m3): 121
Maximum Hourly Emission Rate (lbs/hr): 1.407
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 61.4
MAGLC (ug/m3): 2881

The permittee, has demonstrated that emissions ofnaphthalene and glycol ether, from emissions unit(s) K012, 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).

(2) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), 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 FEPTIO 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.

(3) 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(s) 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(s) or the materials applied.

(4) 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) Unless other arrangements have been approved by the director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

(2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services 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 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 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.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation

Visible particulate emissions from the stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method

If required, compliance with the stack visible particulate emissions limitation shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OACrule 3745-17-03(B)(1).

b. Emission Limitation

Particulate emissions (PE) shall not exceed 0.020 lb/MMBtu of actual heat input from any indirect-fired oven zone associated with this emissions unit.

Applicable Compliance Method

Compliance is inherent based on the AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) emission factor of 0.010 lb/MMBtu (i.e. 7.6 lb of PE/MMscf divided by 1020 MMBtu/MMscf).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60,

Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

c. Emission Limitation

Particulate emissions (PE) shall not exceed 2.9 pounds per hour, based upon Table I of OAC rule 3745-17-11.

Applicable Compliance Method

If required, compliance with the PE limitation shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

d. Emission Limitation

Emissions from this emissions unit shall be vented toRTOs with a destruction removal efficiency (DRE) of at least 95%.

Applicable Compliance Method

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25 or 25A.

e. Emission Limitation

Particulate emissions shall not exceed 0.22 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The PE limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

PE from the combustion of natural gas in the dryer were calculated using the PE factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) and the following equation.

PE = (EF) x (10.8 x 10^6 Btu/hr), where

EF = (7.6 lb PE/10^6 scf) / (1,020 Btu/scf)

PE from the combustion of ink oils in the RTOs were calculated using the PE emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

PE = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 2 pounds of PE per 1,000 gallons

Ink = Maximum ink usage (600 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5.

f. Emission Limitation

Sulfur dioxide emissions shall not exceed 0.01 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The SO_2emission limitation was establishedusing the SO_2 emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) and the following equation.

SO_2 = (EF) x (10.8 x 10^6 Btu/hr), where

EF = (0.6 lb SO_2/10^6 scf) / (1,020 Btu/scf)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C.

g. Emission Limitation

Nitrogen oxide emissions shall not exceed 2.49 pounds per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Nitrogen oxide emissions shall not exceed 10 tons per year (as applicable after U.S. EPA approves the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The hourly NOx emission limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

NOx emissions from the combustion of natural gas in the dryer were calculated using the NOx emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98) and the following equation.

NOx = (EF) x (10.8 x 10^6 Btu/hr), where

EF = (100 lb NOx/10^6 scf) / (1,020 Btu/scf)

NOx emissions from the combustion of ink oils in the RTOs were calculated using the NOx emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

NOx = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 20 pounds of NOx per 1,000 gallons
Ink = Maximum ink usage (600 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

The annual NOx emissions shall be calculated using the previous equations and the actual annual usage of natural gas and ink.

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

h. Emission Limitation

Carbon monoxide emissions shall not exceed 1.25 pounds per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The CO emission limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

CO emissions from the combustion of natural gas in the dryer were calculated using the CO emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98) and the following equation.

CO = (EF) x (10.8 x 10^6 Btu/hr), where

EF = (84 lb CO/10^6 scf) / (1,020 Btu/scf)

CO emissions from the combustion of ink oils in the RTOs were calculated using the CO emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

CO = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 5 pounds of CO per 1,000 gallons
Ink = Maximum ink usage (600 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10.

g) Miscellaneous Requirements

(1) None.

2. K002, 908

Operations, Property and/or Equipment Description:

8 Unit Harris N900 heatset web offset lithographic printing press (908) and dryer controlled by two Langbein-Engelbracht 20,000 acfm regenerative thermal oxidizers (RTOs) operating in tandem.

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. b)(1)h., d)(1) through d)(4) and e)(3)

(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. b)(1)g.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(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 are identified below. 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
a.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.
b.	OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 lb/MMBtu of actual heat input from any indirect-fired oven zone associated with this emissions unit.
c.	OAC rule 3745-17-11(B)(1)	Particulate emissions (PE) shall not exceed 2.9 pounds per hour, based upon Table I of OAC rule 3745-17-11.
d.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	Emissions from the combustion of natural gas in the dryer(s) and ink oils in the RTOs associated with this emissions unit shall not exceed:

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		0.19 pound of PE per hour; 0.004 pound of SO_2 per hour; 2.09 pounds of NOx per hour; and 0.92 pound of CO per hour. See b)(2)a. and b)(2)c. below.
e.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/01/06	See b)(2)b. below.
f.	ORC 3704.03(T)	See b)(2)d. and b)(2)e. below.
g.	OAC rule 3745-31-05(D) (Federally enforceable limitations to avoid Title V)	See Facility-Wide Terms and Conditions.
h.	ORC 3704.03(F)(3)(c) and F(4) (Toxic air contaminant statute)	See d)(1) through d)(4) below.

(2) Additional Terms and Conditions

a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by 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 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limitations/control measures no longer apply.

b. The following rule paragraphs will apply once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan:

i. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE, SO_2, NOx and CO emissions from this air contaminant source since the potentials to emit are less than 10 tons per year.

c. The hourly PE, SO_2, NOx and CO emission limitationswere established to reflect the potential to emit for this emissions unitin accordance with the information provided in the application. It is not necessary to develop monitoring, recordkeeping and/or reporting requirements to ensure compliance with these limitations.

d. Emissions from this emissions unit shall be vented to twoRTOs connected in parallel with a destruction removal efficiency (DRE) of at least 95%.

e. The limitation specified by this rule is equivalent to a limitation established pursuant to OAC rule 3745-31-05(D). The monitoring and recordkeeping requirements established in the Facility-Wide Terms and Conditions for theRTOs are sufficient to ensure compliance with this limitation.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) The FEPTIO application for this/these emissions unit(s), K001 and K002, were evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) 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(s) 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 is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "24" hours per day and "7" days

per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) 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(s):

Toxic Contaminant: Glycol Ether
TLV (mg/m3): 121
Maximum Hourly Emission Rate (lbs/hr): 1.407
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 61.4
MAGLC (ug/m3): 2881

The permittee, has demonstrated that emissions ofnaphthalene and glycol ether, from emissions unit(s) K012, 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).

(2) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), 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 FEPTIO 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.

(3) 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(s) 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(s) or the materials applied.

(4) 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) Unless other arrangements have been approved by the director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

(2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services 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 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 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.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation

Visible particulate emissions from the stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method

If required, compliance with the stack visible particulate emissions limitation shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OACrule 3745-17-03(B)(1).

b. Emission Limitation

Particulate emissions (PE) shall not exceed 0.020 lb/MMBtu of actual heat input from any indirect-fired oven zone associated with this emissions unit.

Applicable Compliance Method

Compliance is inherent based on the AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) emission factor of 0.010 lb/MMBtu (i.e. 7.6 lb of PE/MMscf divided by 1020 MMBtu/MMscf).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

c. Emission Limitation

Particulate emissions (PE) shall not exceed 2.9 pounds per hour, based upon Table I of OAC rule 3745-17-11.

Applicable Compliance Method

If required, compliance with the PE limitation shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

d. Emission Limitation

Emissions from this emissions unit shall be vented to RTOs with a destruction removal efficiency (DRE) of at least 95%.

Applicable Compliance Method

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25 or 25A.

e. Emission Limitation

Particulate emissions shall not exceed 0.19 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The PE limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

PE from the combustion of natural gas in the dryer were calculated using the PE factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) and the following equation.

PE = (EF) x (6.8 x 10^6 Btu/hr), where

EF = (7.6 lb PE/10^6 scf) / (1,020 Btu/scf)

PE from the combustion of ink oils in the RTOs were calculated using the PE emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

PE = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 2 pounds of PE per 1,000 gallons
Ink = Maximum ink usage (600 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5.

f. Emission Limitation

Sulfur dioxide emissions shall not exceed 0.004 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The SO_2emission limitation was establishedusing the SO_2 emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) and the following equation.

SO_2 = (EF) x (6.8 x 10^6 Btu/hr), where

EF = (0.6 lb SO_2/10^6 scf) / (1,020 Btu/scf)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C.

g. Emission Limitation

Nitrogen oxide emissions shall not exceed 2.09 pounds per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The NOx emission limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

NOx emissions from the combustion of natural gas in the dryer were calculated using the NOx emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98) and the following equation.

NOx = (EF) x (6.8 x 10^6 Btu/hr), where

EF = (100 lb NOx/10^6 scf) / (1,020 Btu/scf)

NOx emissions from the combustion of ink oils in the RTOs were calculated using the NOx emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

NOx = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 20 pounds of NOx per 1,000 gallons
Ink = Maximum ink usage (600 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

h. Emission Limitation

Carbon monoxide emissions shall not exceed 0.92 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The CO emission limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

CO emissions from the combustion of natural gas in the dryer were calculated using the CO emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98) and the following equation.

CO = (EF) x (6.8 x 10^6 Btu/hr), where

EF = (84 lb CO/10^6 scf) / (1,020 Btu/scf)

CO emissions from the combustion of ink oils in the RTOs were calculated using the CO emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

CO = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 5 pounds of CO per 1,000 gallons
Ink = Maximum ink usage (600 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10.

g) Miscellaneous Requirements

(1) None.

3. K003, 904

Operations, Property and/or Equipment Description:

4-Unit Harris N900 heatset web offset lithographic printing press (904) and dyer controlled by two Langbein-Englebracht 20,000 acfm regenerative thermal oxidizers (RTOs) operating in tandem.

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. b)(1)h., d)(1) through d)(4) and e)(3)

(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. b)(1)g.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(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 are identified below. 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
a.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.
b.	OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 lb/MMBtu of actual heat input from any indirect-fired oven zone associated with this emissions unit.
c.	OAC rule 3745-17-11(B)(1)	Particulate emissions (PE) shall not exceed 1.9 pounds per hour, based upon Table I of OAC rule 3745-17-11.
d.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	Emissions from the combustion of natural gas in the dryer(s) and ink oils in the RTOs associated with this emissions unit shall not exceed:

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		0.10 pound of PE per hour; 0.002 pound of SO_2 per hour; 1.05 pounds of NOx per hour; and 0.46 pound of CO per hour. See b)(2)a. and b)(2)c. below.
e.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/01/06	See b)(2)b. below.
f.	ORC 3704.03(T)	See b)(2)d. and b)(2)e. below.
g.	OAC rule 3745-31-05(D) (Federally enforceable limitations to avoid Title V)	See Facility-Wide Terms and Conditions.
h.	ORC 3704.03(F)(3)(c) and F(4) (Toxic air contaminant statute)	See d)(1) through d)(4) below.

(2) Additional Terms and Conditions

a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by 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 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limitations/control measures no longer apply.

b. The following rule paragraphs will apply once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan:

i. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE, SO_2, NOx and CO emissions from this air contaminant source since the potentials to emit are less than 10 tons per year.

c. The hourly PE, SO_2, NOx and CO emission limitationswere established to reflect the potential to emit for this emissions unitin accordance with the information provided in the application. It is not necessary to develop monitoring, recordkeeping and/or reporting requirements to ensure compliance with these limitations.

d. Emissions from this emissions unit shall be vented to twoRTOs connected in parallel with a destruction removal efficiency (DRE) of at least 95%.

e. The limitation specified by this rule is equivalent to a limitation established pursuant to OAC rule 3745-31-05(D). The monitoring and recordkeeping requirements established in the Facility-Wide Terms and Conditions for theRTOs are sufficient to ensure compliance with this limitation.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) The FEPTIO application for this/these emissions unit(s), K003, was evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) 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(s) 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 is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "24" hours per day and "7" days

per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) 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(s):

Toxic Contaminant: Glycol Ether
TLV (mg/m3): 121
Maximum Hourly Emission Rate (lbs/hr): 1.407
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 61.4
MAGLC (ug/m3): 2881

The permittee, has demonstrated that emissions ofnaphthalene and glycol ether, from emissions unit(s) K003, 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).

(2) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), 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 FEPTIO 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.

(3) 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(s) 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(s) or the materials applied.

(4) 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) Unless other arrangements have been approved by the director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

(2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services 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 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 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.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation

Visible particulate emissions from the stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method

If required, compliance with the stack visible particulate emissions limitation shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OACrule 3745-17-03(B)(1).

b. Emission Limitation

Particulate emissions (PE) shall not exceed 0.020 lb/MMBtu of actual heat input from any indirect-fired oven zone associated with this emissions unit.

Applicable Compliance Method

Compliance is inherent based on the AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) emission factor of 0.010 lb/MMBtu (i.e. 7.6 lb of PE/MMscf divided by 1020 MMBtu/MMscf).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

c. Emission Limitation

Particulate emissions (PE) shall not exceed 1.9 pounds per hour, based upon Table I of OAC rule 3745-17-11.

Applicable Compliance Method

If required, compliance with the PE limitation shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

d. Emission Limitation

Emissions from this emissions unit shall be vented to RTOs with a destruction removal efficiency (DRE) of at least 95%.

Applicable Compliance Method

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25 or 25A.

e. Emission Limitation

Particulate emissions shall not exceed 0.10 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The PE limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

PE from the combustion of natural gas in the dryer were calculated using the PE factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) and the following equation.

PE = (EF) x (3.4 x 10^6 Btu/hr), where

EF = (7.6 lb PE/10^6 scf) / (1,020 Btu/scf)

PE from the combustion of ink oils in the RTOs were calculated using the PE emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

PE = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 2 pounds of PE per 1,000 gallons
Ink = Maximum ink usage (300 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5.

f. Emission Limitation

Sulfur dioxide emissions shall not exceed 0.002 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The SO_2emission limitation was establishedusing the SO_2 emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) and the following equation.

SO_2 = (EF) x (3.4 x 10^6 Btu/hr), where

EF = (0.6 lb SO_2/10^6 scf) / (1,020 Btu/scf)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C.

g. Emission Limitation

Nitrogen oxide emissions shall not exceed 1.05 pounds per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The NOx emission limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

NOx emissions from the combustion of natural gas in the dryer were calculated using the NOx emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98) and the following equation.

NOx = (EF) x (3.4 x 10^6 Btu/hr), where

EF = (100 lb NOx/10^6 scf) / (1,020 Btu/scf)

NOx emissions from the combustion of ink oils in the RTOs were calculated using the NOx emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

NOx = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 20 pounds of NOx per 1,000 gallons
Ink = Maximum ink usage (300 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

h. Emission Limitation

Carbon monoxide emissions shall not exceed 0.46 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The CO emission limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

CO emissions from the combustion of natural gas in the dryer were calculated using the CO emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98) and the following equation.

CO = (EF) x (3.4 x 10^6 Btu/hr), where

EF = (84 lb CO/10^6 scf) / (1,020 Btu/scf)

CO emissions from the combustion of ink oils in the RTOs were calculated using the CO emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

CO = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 5 pounds of CO per 1,000 gallons
Ink = Maximum ink usage (300 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10.

g) Miscellaneous Requirements

(1) None.

4. K006, 954-2

Operations, Property and/or Equipment Description:

4-unit Harris N954 heatset web offset lithogrphic printing press (954-2) controlled by Dual Dry integrated dryer/thermal afterburner.

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. b)(1)h., d)(1) through d)(4) and e)(3)

(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. b)(1)g.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(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 are identified below. 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
a.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.
b.	OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 lb/MMBtu of actual heat input from any indirect-fired oven zone associated with this emissions unit.
c.	OAC rule 3745-17-11(B)(1)	Particulate emissions (PE) shall not exceed 1.9 pounds per hour, based upon Table I of OAC rule 3745-17-11.
d.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	Emissions from the combustion of natural gas in the dryer(s) and ink oils in the thermal afterburner associated with this emissions unit shall not exceed: 0.11 pound of PE per hour;

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		0.003 pound of SO_2 per hour; 1.23 pounds of NOx per hour; and 0.61 pound of CO per hour. See b)(2)a. and b)(2)c. below.
e.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/01/06	See b)(2)b. below.
f.	ORC 3704.03(T)	See b)(2)d. and b)(2)e. below.
g.	OAC rule 3745-31-05(D) (Federally enforceable limitations to avoid Title V)	See Facility-Wide Terms and Conditions.
h.	ORC 3704.03(F)(3)(c) and F(4) (Toxic air contaminant statute)	See d)(1) through d)(4) below.

(2) Additional Terms and Conditions

a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by 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 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limitations/control measures no longer apply.

b. The following rule paragraphs will apply once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan:

i. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE, SO_2, NOx and CO emissions from this air contaminant source since the potentials to emit are less than 10 tons per year.

c. The hourly PE, SO_2, NOx and CO emission limitationswere established to reflect the potential to emit for this emissions unitin accordance with the information provided in the application. It is not necessary to develop monitoring, recordkeeping and/or reporting requirements to ensure compliance with these limitations.

d. Emissions from this emissions unit shall be vented to a thermal afterburner with a destruction removal efficiency (DRE) of at least 95%.

e. The limitation specified by this rule is equivalent to a limitation established pursuant to OAC rule 3745-31-05(D). The monitoring and recordkeeping requirements established in the Facility-Wide Terms and Conditions for thethermal afterburner are sufficient to ensure compliance with this limitation.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) The FEPTIO application for this/these emissions unit(s), K006, was evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) 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(s) 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 is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "24" hours per day and "7" days

per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) 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(s):

Toxic Contaminant: Glycol Ether
TLV (mg/m3): 121
Maximum Hourly Emission Rate (lbs/hr): 1.407
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 61.4
MAGLC (ug/m3): 2881

The permittee, has demonstrated that emissions ofnaphthalene and glycol ether, from emissions unit(s) K006, 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).

(2) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), 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 FEPTIO 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.

(3) 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(s) 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(s) or the materials applied.

(4) 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) Unless other arrangements have been approved by the director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

(2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services 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 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 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.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation

Visible particulate emissions from the stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method

If required, compliance with the stack visible particulate emissions limitation shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OACrule 3745-17-03(B)(1).

b. Emission Limitation

Particulate emissions (PE) shall not exceed 0.020 lb/MMBtu of actual heat input from any indirect-fired oven zone associated with this emissions unit.

Applicable Compliance Method

Compliance is inherent based on the AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) emission factor of 0.010 lb/MMBtu (i.e. 7.6 lb of PE/MMscf divided by 1020 MMBtu/MMscf).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

c. Emission Limitation

Particulate emissions (PE) shall not exceed 1.9 pounds per hour, based upon Table I of OAC rule 3745-17-11.

Applicable Compliance Method

If required, compliance with the PE limitation shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

d. Emission Limitation

Emissions from this emissions unit shall be vented to a thermal afterburner with a destruction removal efficiency (DRE) of at least 95%.

Applicable Compliance Method

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25 or 25A.

e. Emission Limitation

Particulate emissions shall not exceed 0.11 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The PE limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the thermal afterburner.

PE from the combustion of natural gas in the dryer were calculated using the PE factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) and the following equation.

PE = (EF) x (5.25 x 10^6 Btu/hr), where

EF = (7.6 lb PE/10^6 scf) / (1,020 Btu/scf)

PE from the combustion of ink oils in the thermal afterburner were calculated using the PE emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

PE = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 2 pounds of PE per 1,000 gallons
Ink = Maximum ink usage (300 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5.

f. Emission Limitation

Sulfur dioxide emissions shall not exceed 0.003 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The SO_2emission limitation was establishedusing the SO_2 emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) and the following equation.

SO_2 = (EF) x (5.25 x 10^6 Btu/hr), where

EF = (0.6 lb SO_2/10^6 scf) / (1,020 Btu/scf)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C.

g. Emission Limitation

Nitrogen oxide emissions shall not exceed 1.23 pounds per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The NOx emission limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the thermal afterburner.

NOx emissions from the combustion of natural gas in the dryer were calculated using the NOx emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98) and the following equation.

NOx = (EF) x (5.25 x 10^6 Btu/hr), where

EF = (100 lb NOx/10^6 scf) / (1,020 Btu/scf)

NOx emissions from the combustion of ink oils in the thermal afterburner were calculated using the NOx emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

NOx = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 20 pounds of NOx per 1,000 gallons
Ink = Maximum ink usage (300 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

h. Emission Limitation

Carbon monoxide emissions shall not exceed 0.61 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The CO emission limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the thermal afterburner.

CO emissions from the combustion of natural gas in the dryer were calculated using the CO emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98) and the following equation.

$CO = (EF) \times (5.25 \times 10^6 \text{ Btu/hr})$, where

$EF = (84 \text{ lb } CO/10^6 \text{ scf}) / (1{,}020 \text{ Btu/scf})$

CO emissions from the combustion of ink oils in the thermal afterburner were calculated using the CO emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

$CO = (EF) \times (Ink) \times (1 - RF) / (Density)$, where

EF = 5 pounds of CO per 1,000 gallons
Ink = Maximum ink usage (300 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10.

g) Miscellaneous Requirements

(1) None.

5. Emissions Unit Group -4-Unit C-700: K008, K010 and K011

EU ID	Operations, Property and/or Equipment Description
K008	4-unit Goss C700 heatset web offset lithographic printing press (701) and dryer controlled by two RTOs in tandem.
K010	4-unit Goss C700 heatset web offset lithographic printing press and associated dryer controlled by two Langbein-Engelbracht 20,000 acfm regenerative thermal oxidizers (RTOs) operating in tandem.
K011	4- unit Goss C700 heastset web offset lithographic printing press and associated dryer controlled by two Langbein-Engelbracht 20,000 acfm regenerative thermal oxidizers (RTOs) operating in tandem.

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. b)(1)h., d)(1) through d)(4) and e)(3)

(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. b)(1)g.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(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 are identified below. 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
a.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.
b.	OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 lb/MMBtu of actual heat input from any indirect-fired oven zone associated with this emissions unit.
c.	OAC rule 3745-17-11(B)(1)	Particulate emissions (PE) shall not exceed 2.1 pounds per hour, based upon Table I of OAC rule 3745-17-11.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	Emissions from the combustion of natural gas in the dryer(s) and ink oils in the RTOs associated with this emissions unit shall not exceed: 0.15 pound of PE per hour; 0.01 pound of SO_2 per hour; 1.68 pounds of NOx per hour; and 0.92 pound of CO per hour. See b)(2)a. and b)(2)c. below.
e.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/01/06	See b)(2)b. below.
f.	ORC 3704.03(T)	See b)(2)d. and b)(2)e. below.
g.	OAC rule 3745-31-05(D) (Federally enforceable limitations to avoid Title V)	See Facility-Wide Terms and Conditions.
h.	ORC 3704.03(F)(3)(c) and F(4) (Toxic air contaminant statute)	See d)(1) through d)(4) below.

(2) Additional Terms and Conditions

a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by 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 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limitations/control measures no longer apply.

b. The following rule paragraphs will apply once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan:

i. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE, SO_2, NOx and CO emissions from this air contaminant source since the potentials to emit are less than 10 tons per year.

c. The hourly PE, SO_2, NOx and CO emission limitationswere established to reflect the potential to emit for this emissions unitin accordance with the information provided in the application. It is not necessary to develop monitoring, recordkeeping and/or reporting requirements to ensure compliance with these limitations.

d. Emissions from this emissions unit shall be vented to twoRTOs connected in parallel with a destruction removal efficiency (DRE) of at least 95%.

e. The limitation specified by this rule is equivalent to a limitation established pursuant to OAC rule 3745-31-05(D). The monitoring and recordkeeping requirements established in the Facility-Wide Terms and Conditions for theRTOs are sufficient to ensure compliance with this limitation.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) The FEPTIO application for this/these emissions unit(s), K008, K010, and K011, were evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) 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(s) 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 is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "24" hours per day and "7" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4\ TLV/XY = MAGLC$$

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(s):

Toxic Contaminant: Glycol Ether
TLV (mg/m3): 121
Maximum Hourly Emission Rate (lbs/hr): 1.407
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 61.4
MAGLC (ug/m3): 2881

The permittee, has demonstrated that emissions ofnaphthalene and glycol ether, from emissions unit(s) K008, K010, and K011, 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).

(2) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), 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 FEPTIO 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.

(3) 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(s) 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(s) or the materials applied.

(4) 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) Unless other arrangements have been approved by the director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

(2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services 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 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 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.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation

Visible particulate emissions from the stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method

If required, compliance with the stack visible particulate emissions limitation shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OACrule 3745-17-03(B)(1).

b. Emission Limitation

Particulate emissions (PE) shall not exceed 0.020 lb/MMBtu of actual heat input from any indirect-fired oven zone associated with this emissions unit.

Applicable Compliance Method

Compliance is inherent based on the AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) emission factor of 0.010 lb/MMBtu (i.e. 7.6 lb of PE/MMscf divided by 1020 MMBtu/MMscf).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

c. Emission Limitation

Particulate emissions (PE) shall not exceed 2.1 pounds per hour, based upon Table I of OAC rule 3745-17-11.

Applicable Compliance Method

If required, compliance with the PE limitation shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

d. Emission Limitation

Emissions from this emissions unit shall be vented to RTOs with a destruction removal efficiency (DRE) of at least 95%.

Applicable Compliance Method

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25 or 25A.

e. Emission Limitation

Particulate emissions shall not exceed 0.15 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The PE limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

PE from the combustion of natural gas in the dryer were calculated using the PE factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) and the following equation.

PE = (EF) x (8.6 x 10^6 Btu/hr), where

EF = (7.6 lb PE/10^6 scf) / (1,020 Btu/scf)

PE from the combustion of ink oils in the RTOs were calculated using the PE emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

PE = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 2 pounds of PE per 1,000 gallons
Ink = Maximum ink usage (350 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5.

f. Emission Limitation

Sulfur dioxide emissions shall not exceed 0.01 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The SO_2emission limitation was establishedusing the SO_2 emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) and the following equation.

SO_2 = (EF) x (8.6 x 10^6 Btu/hr), where

EF = (0.6 lb SO_2/10^6 scf) / (1,020 Btu/scf)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C.

g. Emission Limitation

Nitrogen oxide emissions shall not exceed 1.68 pounds per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The NOx emission limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

NOx emissions from the combustion of natural gas in the dryer were calculated using the NOx emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98) and the following equation.

NOx = (EF) x (8.6 x 10^6 Btu/hr), where

EF = (100 lb NOx/10^6 scf) / (1,020 Btu/scf)

NOx emissions from the combustion of ink oils in the RTOs were calculated using the NOx emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

NOx = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 20 pounds of NOx per 1,000 gallons
Ink = Maximum ink usage (350 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

h. Emission Limitation

Carbon monoxide emissions shall not exceed 0.92 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The CO emission limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

CO emissions from the combustion of natural gas in the dryer were calculated using the CO emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98) and the following equation.

CO = (EF) x (8.6 x 10^6 Btu/hr), where

EF = (84 lb CO/10^6 scf) / (1,020 Btu/scf)

CO emissions from the combustion of ink oils in the RTOs were calculated using the CO emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

CO = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 5 pounds of CO per 1,000 gallons
Ink = Maximum ink usage (350 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10.

g) Miscellaneous Requirements

(1) None.

6. Emissions Unit Group -4-Unit C-500: K015 and K016

EU ID	Operations, Property and/or Equipment Description
K015	Goss C-500 4-unit Heatset Printing Press with natural gas-fired dryer vented to twoRTOs connected in parallel
K016	Goss C-500 4-unit Heastset printing press with natural gas-fired dryer vented to two RTOs connected in parallel

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. b)(1)h., d)(1) through d)(4) and e)(3)

(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. b)(1)g.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(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 are identified below. 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
a.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.
b.	OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 lb/MMBtu of actual heat input from any indirect-fired oven zone associated with this emissions unit.
c.	OAC rule 3745-17-11(B)(1)	Particulate emissions (PE) shall not exceed 1.5 pounds per hour, based upon Table I of OAC rule 3745-17-11.
d.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	Emissions from the combustion of natural gas in the dryer(s) and ink oils in the RTOs associated with this emissions unit shall not exceed:

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		0.07 pound of PE per hour; 0.002 pound of SO_2 per hour; 0.74 pound of NOx per hour; and 0.34 pound of CO per hour. See b)(2)a. and b)(2)c. below.
e.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/01/06	See b)(2)b. below.
f.	ORC 3704.03(T)	See b)(2)d. and b)(2)e. below.
g.	OAC rule 3745-31-05(D) (Federally enforceable limitations to avoid Title V)	See Facility-Wide Terms and Conditions.
h.	ORC 3704.03(F)(3)(c) and F(4) (Toxic air contaminant statute)	See d)(1) through d)(4) below.

(2) Additional Terms and Conditions

a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by 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 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limitations/control measures no longer apply.

b. The following rule paragraphs will apply once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan:

i. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE, SO_2, NOx and CO emissions from this air contaminant source since the potentials to emit are less than 10 tons per year.

c. The hourly PE, SO_2, NOx and CO emission limitationswere established to reflect the potential to emit for this emissions unitin accordance with the information provided in the application. It is not necessary to develop monitoring, recordkeeping and/or reporting requirements to ensure compliance with these limitations.

d. Emissions from this emissions unit shall be vented to twoRTOs connected in parallel with a destruction removal efficiency (DRE) of at least 95%.

e. The limitation specified by this rule is equivalent to a limitation established pursuant to OAC rule 3745-31-05(D). The monitoring and recordkeeping requirements established in the Facility-Wide Terms and Conditions for theRTOs are sufficient to ensure compliance with this limitation.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) TheFEPTIO application for these emissions units, K015 and K016, was evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to these emissions units 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(s) 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 units, (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 is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "24" hours per day and "7" days

per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) 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 ton/year) or "worst case" toxic contaminant(s):

Toxic Contaminant: glycol ether
TLV (mg/m^3): 96.66
Maximum Hourly Emission Rate (lb/hr): 10.7
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 289
MAGLC (ug/m^3): 2,300

The permittee, has demonstrated that emissions of glycol ether, from emissions units K015 and K016, 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).

(2) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), 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 FEPTIO 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.

(3) 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(s) 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(s) or the materials applied.

(4) 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) Unless other arrangements have been approved by the director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

(2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services 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 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 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.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation

Visible particulate emissions from the stack shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method

If required, compliance with the stack visible particulate emissions limitation shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OACrule 3745-17-03(B)(1).

b. Emission Limitation

Particulate emissions (PE) shall not exceed 0.020 lb/MMBtu of actual heat input from any indirect-fired oven zone associated with this emissions unit.

Applicable Compliance Method

Compliance is inherent based on the AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) emission factor of 0.010 lb/MMBtu (i.e. 7.6 lb of PE/MMscf divided by 1020 MMBtu/MMscf).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

c. Emission Limitation

Particulate emissions (PE) shall not exceed 1.5 pounds per hour, based upon Table I of OAC rule 3745-17-11.

Applicable Compliance Method

If required, compliance with the PE limitation shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

d. Emission Limitation

Emissions from this emissions unit shall be vented to RTOs with a destruction removal efficiency (DRE) of at least 95%.

Applicable Compliance Method

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25 or 25A.

e. Emission Limitation

Particulate emissions shall not exceed 0.07 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The PE limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

PE from the combustion of natural gas in the dryer were calculated using the PE factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) and the following equation.

PE = (EF) x (2.7 x 10^6 Btu/hr), where

EF = (7.6 lb PE/10^6 scf) / (1,020 Btu/scf)

PE from the combustion of ink oils in the RTOs were calculated using the PE emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

PE = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 2 pounds of PE per 1,000 gallons
Ink = Maximum ink usage (200 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5.

f. Emission Limitation

Sulfur dioxide emissions shall not exceed 0.002 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The SO_2emission limitation was establishedusing the SO_2 emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98) and the following equation.

SO_2 = (EF) x (2.7 x 10^6 Btu/hr), where

EF = (0.6 lb SO_2/10^6 scf) / (1,020 Btu/scf)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C.

g. Emission Limitation

Nitrogen oxide emissions shall not exceed 0.74 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The NOx emission limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

NOx emissions from the combustion of natural gas in the dryer were calculated using the NOx emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98) and the following equation.

NOx = (EF) x (2.7 x 10^6 Btu/hr), where

EF = (100 lb NOx/10^6 scf) / (1,020 Btu/scf)

NOx emissions from the combustion of ink oils in the RTOs were calculated using the NOx emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

NOx = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 20 pounds of NOx per 1,000 gallons
Ink = Maximum ink usage (200 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

h. Emission Limitation

Carbon monoxide emissions shall not exceed 0.34 pound per hour (as applicable prior to U.S. EPA approving the December 1, 2006, version of OAC rule 3745-31-05 as part of the SIP).

Applicable Compliance Method

The CO emission limitation was established by summing the emissions from the combustion of natural gas in the dryer and the combustion of ink oils in the RTOs.

CO emissions from the combustion of natural gas in the dryer were calculated using the CO emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98) and the following equation.

CO = (EF) x (2.7 x 10^6 Btu/hr), where

EF = (84 lb CO/10^6 scf) / (1,020 Btu/scf)

CO emissions from the combustion of ink oils in the RTOs were calculated using the CO emission factor specified in AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (5/10) and the following equation.

CO = (EF) x (Ink) x (1 – RF) / (Density), where

EF = 5 pounds of CO per 1,000 gallons
Ink = Maximum ink usage (200 lb/hr)
RF = Substrate retention factor (20%)
Density = Ink oil density (6.73 lb/gal)

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10.

g) Miscellaneous Requirements

(1) None.