



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL MODIFICATION
WAYNE COUNTY**

CERTIFIED MAIL

Street Address:

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov.
Center

Application No: 02-12791

DATE: 9/16/2003

Metromedia Technologies Inc
Ralph Gillota
1061 Venture Blvd
Wooster, OH 44691

Enclosed Please find a modification to the Ohio EPA Permit To Install referenced above which will modify the terms and conditions.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

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

Sincerely,

Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

CC: USEPA

NEDO



**Permit To Install
Terms and Conditions**

**Issue Date: 9/16/2003
Effective Date: 9/16/2003**

FINAL ADMINISTRATIVE MODIFICATION OF PERMIT TO INSTALL 02-12791

Application Number: 02-12791
APS Premise Number: 0285030295
Permit Fee: **\$2400**
Name of Facility: Metromedia Technologies Inc
Person to Contact: Ralph Gillota
Address: 1061 Venture Blvd
Wooster, OH 44691

Location of proposed air contaminant source(s) [emissions unit(s)]:
**1061 Venture Blvd
Wooster, Ohio**

Description of proposed emissions unit(s):
Administrative modification of PTI 02-12791, issued on 7/8/99, to make various administrative changes.

The above named entity is hereby granted a modification to the permit to install described above pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this modification does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans included in the application, the above described source(s) of pollutants will be granted the necessary operating permits.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Part I - GENERAL TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install General Terms and Conditions

1. Monitoring and Related Recordkeeping and Reporting Requirements

- a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
 - i. The date, place (as defined in the permit), and time of sampling or measurements.
 - ii. The date(s) analyses were performed.
 - iii. The company or entity that performed the analyses.
 - iv. The analytical techniques or methods used.
 - v. The results of such analyses.
 - vi. The operating conditions existing at the time of sampling or measurement.
- b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
- c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
 - i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
 - ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the appropriate Ohio EPA District Office or local air agency. The written

reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See B.9 below if no deviations occurred during the quarter.

- iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the appropriate Ohio EPA District Office or local air agency every six months, i.e., by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
- iv. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

2. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

3. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

4. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

5. Severability Clause

A determination that any term or condition of this permit is invalid shall not invalidate the force or

effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

6. General Requirements

- a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and reissuance, or modification, or for denial of a permit renewal application.
- b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c. This permit may be modified, reopened, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d. This permit does not convey any property rights of any sort, or any exclusive privilege.
- e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

7. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit To Install fees within 30 days after the issuance of this Permit To Install.

8. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA, the State, and citizens under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

9. Compliance Requirements

- a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.
- b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
 - i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
 - ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
 - iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
 - iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
 - i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
 - ii. An explanation of why any dates in any schedule of compliance were not or will

not be met, and any preventive or corrective measures adopted.

10. Permit To Operate Application

- a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).
- b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

11. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

12. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

B. State Only Enforceable Permit To Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

4. Termination of Permit To Install

This permit to install shall terminate within eighteen months of the effective date of the permit to install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete

within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

5. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

6. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

7. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

8. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit To Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

9. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

C. Permit To Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

**SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS**

<u>Pollutant</u>	<u>Tons Per Year</u>
OC	113.9

Metromedia Technologies Inc

Facility ID: **0285030295**

PTI Application: **02-12791**

Modification Issued: 9/16/2003

Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions

None

B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R001 - Ink jet printer 53.1 feet long by 17.3 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R001) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R001, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit

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- was in compliance.
2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
 3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
 4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
 5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the

emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R025:
 - a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:
 - a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;

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- b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R001, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Emissions Unit ID: R001

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

- a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.
- b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;
- c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)
- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.

- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

1. This Permit to Install (PTI) supersedes PTI Number 02-4035, effective September 20, 1989, for this emissions unit.

Modification Issued: 9/16/2003

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R001 - Ink jet printer 53.1 feet long by 17.3 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m ³):	205,000
Maximum Hourly Emission Rate (lbs/hr):	28.8 (ALL 23 MACHINES)
Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m ³):	11.17
Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m ³):	4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

Emissions Unit ID: **R001**

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R002 - Ink jet printer 53.1 feet long by 17.3 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R002) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R002, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

II. Operational Restrictions

- 1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the

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Metromedia Technologies Inc

DTI Application: **02 12701**

Facility ID: **0285030295**

Emissions Unit ID: **R002**

average

Modification Issued: 9/16/2003

temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust

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gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:

- a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
- d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for

Emissions Unit ID: **R002**

each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:

Emissions Unit ID: **R002**

Modification Issued: 9/16/2003

Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R002, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

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Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements.
 - a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.
 - b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;
 - c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)
 - d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the

Emissions Unit ID: **R002**

diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
- 3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

- 1. This Permit to Install (PTI) supersedes PTI Number 02-4035, effective September 20, 1989, for this emissions unit.

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R002 - Ink jet printer 53.1 feet long by 17.3 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000

Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)

Predicted 1-Hour Maximum Ground-Level

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concentration at the Fenceline (ug/m³): 11.17
Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

Modification Issued: 9/16/2003

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R003 - Ink jet printer 53.1 feet long by 17.3 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a The organic compounds emitted from this emissions unit, (R003) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.

2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R003, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

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II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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- temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
 3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
 4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
 5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

Emissions Unit ID: **R003**

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:

- a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
- d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

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hour from emissions unit R003, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

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- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).
- Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

1. This Permit to Install (PTI) supersedes PTI Number 02-4035, effective September 20, 1989, for this emissions unit.

Modification Issued: 9/16/2003**B. State Only Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R003 - Ink jet printer 53.1 feet long by 17.3 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Emissions Unit ID: R003

Pollutant: MIBK

TLV (ug/m ³):	205,000
Maximum Hourly Emission Rate (lbs/hr):	28.8 (ALL 23 MACHINES)
Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m ³):	11.17
Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m ³):	4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

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- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R004 - Ink jet printer 61.4 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R004) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R004, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

Emissions Unit ID: R004

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R024:
 - a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

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This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

Emissions Unit ID: **R004**

hour from emissions unit R004, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c **Emission Limitation:**

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

- a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.
- b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;
- c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)
- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA

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

- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
- 3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

- 1. This Permit to Install (PTI) supersedes PTI Number 02-4035, effective September 20, 1989, for this emissions unit.

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R004 - Ink jet printer 61.4 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m ³):	205,000
Maximum Hourly Emission Rate (lbs/hr):	28.8 (ALL 23 MACHINES)
Predicted 1-Hour Maximum Ground-Level	

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concentration at the Fenceline (ug/m ³):	11.17
Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m ³):	4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Modification Issued: 9/16/2003**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R005 - Ink jet printer 61.4 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R005) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R005, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

Emissions Unit ID: R005

temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the

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temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R024:

- a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
- d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

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hour from emissions unit R005, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

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- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).
- Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

1. This Permit to Install (PTI) supersedes PTI Number 02-4035, effective September 20, 1989, for this emissions unit.

Emissions Unit ID: R005

B. State Only Enforceable Section**I. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R005 - Ink jet printer 61.4 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m ³):	205,000
Maximum Hourly Emission Rate (lbs/hr):	28.8 (ALL 23 MACHINES)
Predicted 1-Hour Maximum Ground-Level	

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concentration at the Fenceline (ug/m ³):	11.17
Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m ³):	4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R006 - Ink jet printer 61.4 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R006) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R006, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

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II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust

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gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R024:
 - a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

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hour from emissions unit R006, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

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- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).
- Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

1. This Permit to Install (PTI) supersedes PTI Number 02-4035, effective September 20, 1989, for this emissions unit.

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B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R006 - Ink jet printer 61.4 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Emissions Unit ID: R006

Pollutant: MIBK

TLV (ug/m ³):	205,000
Maximum Hourly Emission Rate (lbs/hr):	28.8 (ALL 23 MACHINES)
Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m ³):	11.17
Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m ³):	4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

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- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R007 - Ink jet printer 61.4 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R007) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R007, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust

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gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R024:
 - a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

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IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

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hour from emissions unit R007, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

- a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.
- b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;
- c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)
- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA

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

- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
- 3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

- 1. This Permit to Install (PTI) supersedes PTI Number 02-4035, effective September 20, 1989, for this emissions unit.

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R007 - Ink jet printer 61.4 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m ³):	205,000
Maximum Hourly Emission Rate (lbs/hr):	28.8 (ALL 23 MACHINES)
Predicted 1-Hour Maximum Ground-Level	

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concentration at the Fenceline (ug/m ³):	11.17
Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m ³):	4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Modification Issued: 9/16/2003**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R008 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R008) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R008, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The

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temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:
 - a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

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hour from emissions unit R008, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

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- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).
- Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

1. This Permit to Install (PTI) supersedes PTI Number 02-4035, effective September 20, 1989, for this emissions unit.

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R008 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000

Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)

Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m³): 11.17

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Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

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- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R009 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R009) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R009, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

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II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust

Emissions Unit ID: **R009**

gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:
 - a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R009, and 26.0 pounds per hour from emissions units R001, R002,

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R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and

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outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

1. This Permit to Install (PTI) supersedes PTI Number 02-4035, effective September 20, 1989, for this emissions unit.

Modification Issued: 9/16/2003**B. State Only Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R009 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000
Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)
Predicted 1-Hour Maximum Ground-Level
concentration at the Fenceline (ug/m³): 11.17
Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that

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show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R010 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R010) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R010, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an

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85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

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II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and

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- c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:
 - a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1

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minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

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IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:
 - a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

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1.b Emission Limitation:

Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R010, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

- a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.
- b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;
- c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)
- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol.

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The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
- 3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

- 1. This Permit to Install (PTI) supersedes PTI Number 02-4035, effective September 20, 1989, for this emissions unit. The organic compounds emitted from this emissions unit, (R001) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.

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Metromedia Technologies Inc

DTI Application: **02 12701**

Facility ID: **0285030295**

Emissions Unit ID: **R010**

Modification Issued: 9/16/2003

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R010 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

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TLV (ug/m ³):	205,000
Maximum Hourly Emission Rate (lbs/hr):	28.8 (ALL 23 MACHINES)
Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m ³):	11.17
Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m ³):	4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted,

Emissions Unit ID: R010

change in stack/exhaust parameters, etc.);

- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R011 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R011) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R011, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust

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gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:

- a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
- d. The total combined monthly OC emissions (the summation of line (b) multiplied by line

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(c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

Emissions Unit ID: **R011**

hour from emissions unit R011, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA

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

- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
- 3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R011 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000

Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)

Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m³): 11.17

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Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

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- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R012 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R012) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R012, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and

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an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

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II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and

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- c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:
- a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1

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minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

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IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:
 - a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and

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cleanup materials.

1.b Emission Limitation:

Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R012, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the

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request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R012 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000

Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)

Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m³): 11.17

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Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

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- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Modification Issued: 9/16/2003**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R013 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R013) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R013, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

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II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust

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gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:
 - a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

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hour from emissions unit R013, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

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- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).
- Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

None

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B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R013 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000
Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)
Predicted 1-Hour Maximum Ground-Level
concentration at the Fenceline (ug/m³): 11.17
Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that

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show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R014 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R014) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R014, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust

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gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:

- a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
- d. The total combined monthly OC emissions (the summation of line (b) multiplied by line

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(c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

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hour from emissions unit R014, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA

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

- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
- 3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R014 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000

Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)

Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m³): 11.17

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Maximum Acceptable Ground-Level
Concentration (MAGLC) ($\mu\text{g}/\text{m}^3$): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

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- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R015 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R015) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R015, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and

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an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

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II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and

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- c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.

4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.

5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:

- a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
- d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1

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minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

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IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:
 - a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and

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cleanup materials.

1.b Emission Limitation:

Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R015, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the

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request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R015 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000

Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)

Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m³): 11.17

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Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

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- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Modification Issued: 9/16/2003

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R016 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-005(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R016) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R016, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

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II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust

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gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:
 - a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

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hour from emissions unit R016, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

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- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).
- Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

None

Modification Issued: 9/16/2003**B. State Only Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R016 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000
Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)
Predicted 1-Hour Maximum Ground-Level
concentration at the Fenceline (ug/m³): 11.17
Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that

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show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R017 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R017) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R017, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the

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emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:

- a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
- d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials

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multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:
 - a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;

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- b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
- c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters

2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R017, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

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Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

- a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.
- b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;
- c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)
- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.

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- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R017 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000

Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)

Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m³): 11.17

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Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

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- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R018 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R018) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R018, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

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II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;

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- b. the temperature of the desorption air stream entering the concentrator; and
- c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:

- a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
- d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials

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multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:
 - a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;

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- b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
- 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency
- Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
- 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R018, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.
- Applicable Compliance Method:

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Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

- a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.
- b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;
- c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)
- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a

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consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R018 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000

Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)

Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m³): 11.17

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Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

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- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Modification Issued: 9/16/2003**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R019 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R019) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R019, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

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II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust

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gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:
 - a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

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hour from emissions unit R019, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

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- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).
- Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

None

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B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R019 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000
Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)
Predicted 1-Hour Maximum Ground-Level
concentration at the Fenceline (ug/m³): 11.17
Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that

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show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Modification Issued: 9/16/2003**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R020 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R020) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R020, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust

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gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:

- a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
- d. The total combined monthly OC emissions (the summation of line (b) multiplied by line

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(c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

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hour from emissions unit R020, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c **Emission Limitation:**

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

- a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.
- b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;
- c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)
- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA

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

- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
- 3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R020 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000

Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)

Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m³): 11.17

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Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

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- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Modification Issued: 9/16/2003**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R021 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R021) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R021, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

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II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust

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gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:
 - a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

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hour from emissions unit R021, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

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- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).
- Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R021 - Ink jet printer 51.0 feet long by 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000

Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)

Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m³): 11.17

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Maximum Acceptable Ground-Level
Concentration (MAGLC) ($\mu\text{g}/\text{m}^3$): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

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- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R022 - Ink jet printer 61.4 feet long by 32.0 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R022) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R022, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting

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are required to demonstrate compliance with this limitation.

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II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and

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- c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:
- The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1

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minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

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IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify:
 - a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R022, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

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Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c Emission Limitation:

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.

b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;

c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol.

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The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
- 3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

None

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B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R022 - Ink jet printer 61.4 feet long by 32.0 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000
Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)
Predicted 1-Hour Maximum Ground-Level
concentration at the Fenceline (ug/m³): 11.17
Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that

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show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Modification Issued: 9/16/2003**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R023 - Ink jet printer 61.4 feet long by 32.0 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a and A.I.2.b below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a The organic compounds emitted from this emissions unit, (R023) shall be vented to a control device (a flow concentrator and a thermal oxidizer) with a minimum capture efficiency of 90 percent by weight and a minimum destruction efficiency of 95 percent by weight. This is based on the August 26, 1998, Consent Judgement with Ohio EPA.
- 2.b Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per hour from emissions unit R023, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average

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temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
3. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated the emissions unit was in compliance. The permittee shall maintain the duration of each regeneration cycle within 5 percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within 5 percent of the set point.
4. The operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by the Ohio EPA, compliance with the mass emission limitations shall be determined by performing concurrent mass emission tests and parameter readings, using US EPA-approved methods and procedures. The results of any required emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitations.
5. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
 - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
 - b. the temperature of the desorption air stream entering the concentrator; and
 - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust

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gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within 1 percent of the temperature/time being measured or 5 degrees Fahrenheit/ 0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

2. The permittee shall install and thereafter operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.2 and A.II.3 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activations levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in the emissions units R001-R023:
 - a. The name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs OC/gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line

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(c) for each organic compound employed in coatings, inks, and cleanup materials multiplied by 1 minus the retention factor determined in the BAT study multiplied by 1 minus the overall control efficiency established during the most recent emission test that demonstrated the emissions unit was in compliance).

This information does not have to be kept on a line-by-line basis.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify.

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- a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
 - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.2, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
 - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
 - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001-R023, combined, for the previous calendar year. These reports shall be submitted to the Director (Ohio Environmental Protection Agency, Northeast District Office) by January 30 of each year and shall cover the previous calendar year.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
 - 1.a Emission Limitation:
Minimum 90% (by weight) Capture Efficiency & 95% (by weight) Destruction Efficiency

Applicable Compliance Method:
OAC rule 3745-21-10(B). See A.V.2. USEPA Method 24A (for coatings, inks and cleanup materials) shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
 - 1.b Emission Limitation:
Organic compound (OC) emissions from all coatings and inks shall not exceed 1.13 pounds per

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hour from emissions unit R023, and 26.0 pounds per hour from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance shall be based upon the emission testing, performed in accordance with the methods and procedures specified in Section A.V.3. The hourly limitation is based on the emissions units' potential to emit calculated using 526 square feet of material printed per hour per machine, 0.0024 gallon mixed ink per square foot, 6.2 pound OC per gallon of mixed ink and an 85.5% overall control efficiency. Therefore, no hourly record keeping and deviation reporting are required to demonstrate compliance with this limitation.

1.c **Emission Limitation:**

OC emissions from all coatings, inks and cleanup materials shall not exceed 113.9 tons per year from emissions units R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, and R023, combined.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be based upon the record keeping in A.III.5.

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

- a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.
- b. The emission testing shall be conducted to demonstrate compliance with the capture and destruction efficiency requirements specified in Section A.I.2.a., to establish the average combustion temperature within the thermal oxidizer, to establish the temperature of the air flow entering the concentrator for the desorption cycle, and to establish the time period for the regeneration cycle;
- c. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)
- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases. Alternative U.S. EPA

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

- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio Environmental Protection Agency, Northeast District Office.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio Environmental Protection Agency, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio Environmental Protection Agency Northeast District Office's refusal to accept the results of the emissions test(s).

Personnel from the Ohio Environmental Protection Agency Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emission unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Ohio Environmental Protection Agency Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio Environmental Protection Agency Northeast District Office.
- 3. The VOC content of each coating, ink, and cleanup material used shall be based upon the use of USEPA Method 24A.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R023 - Ink jet printer 61.4 feet long by 32.0 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system		

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: MIBK

TLV (ug/m³): 205,000

Maximum Hourly Emission Rate (lbs/hr): 28.8 (ALL 23 MACHINES)

Predicted 1-Hour Maximum Ground-Level concentration at the Fenceline (ug/m³): 11.17

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Maximum Acceptable Ground-Level
Concentration (MAGLC) (ug/m³): 4880

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value 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 pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

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- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

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V. Testing Requirements

None

VI. Miscellaneous Requirements

None