



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL
CUYAHOGA COUNTY**

CERTIFIED MAIL

Street Address:

122 S. Front Street

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

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049

Application No: 13-04656

Fac ID: 1318067810

DATE: 12/8/2006

Ceilcote USA, Incorporated
Bill Slama
640 North Rocky River Drive
Berea, OH 44017

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 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. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00 which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. 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, OH 43215

Sincerely,

Michael W. Ahern, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

CC: USEPA

CLAA



**Permit To Install
Terms and Conditions**

**Issue Date: 12/8/2006
Effective Date: 12/8/2006**

FINAL PERMIT TO INSTALL 13-04656

Application Number: 13-04656
Facility ID: 1318067810
Permit Fee: **\$1200**
Name of Facility: Ceilcote USA, Incorporated
Person to Contact: Bill Slama
Address: 640 North Rocky River Drive
Berea, OH 44017

Location of proposed air contaminant source(s) [emissions unit(s)]:
**640 North Rocky River Drive
Berea, Ohio**

Description of proposed emissions unit(s):
6 mixer stations consisting of portable 500 gal process tanks, cleaning station, filling station, ventilation system with dust collector and fume incinerator -- P003, P004, P005, P006, P007, and P008.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(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 and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Part I - GENERAL TERMS AND CONDITIONS

A. 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 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 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 (i.e., postmarked) quarterly 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. Records Retention Requirements

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.

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon

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the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. 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 verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

5. 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 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. 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 emissions unit(s) that is (are) served by such control system(s).

6. 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.

7. 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.

8. 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.

9. Construction of New Sources(s)

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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.

10. 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.

11. 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.

12. 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.

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13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This 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 emissions unit(s) covered by this permit.

14. 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.

15. 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.

B. 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>
PM	7.77
Single HAP	9.9
Combined HAP	24.5

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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>
P003 - Mixer station, portable process tanks up to 500 gallons, tank cleaning station, container filling station, ventilation system with dust collector and fume incinerator	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)(1)	Particulate emissions (PE) shall not exceed 0.551 lb/hr.
	OAC rule 3745-21-07(G)(2)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-02(A).
	OAC rule 3745-31-05(C) Synthetic Minor to avoid Title V and MACT subpart HHHHH	See A.2.a below. Organic compound (OC) emissions shall be less than 10.0 tons per year (TPY). See A.2.b below.
	ORC 3704.03(T)(4)	See A.2.c below.

2. Additional Terms and Conditions

- 2.a The total allowable usage and emissions of Hazardous Air Pollutants (HAPs) as identified in Section 112(b) of Title III of the Clean Air Act, from emissions units at this facility (P003, P004, P005, P006, P007 and P008) shall not exceed 9.9

tons per year for any individual HAP or 24.5 tons per year for a combination of HAPs. Compliance with the above limitations shall be based upon a rolling, 12-month summation.

- 2.b** Permit to Install 13-04656 for this air contaminant source takes into account the use of a catalytic incinerator, whenever this air contaminant source is in operation, with a minimum control efficiency of 95%, by weight for OC, as a voluntary restriction as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3).
- 2.c** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the calculated annual emission rate for particulate emissions is less than ten tons per year taking into account the federally enforceable rule limit of 0.551 lbs PE/hr under OAC rule 3745-17-11(B)(1).

B. Operational Restrictions

1. The permittee shall maintain the viability of the catalyst system by testing and replacing the catalyst as required in this permit. The longevity of the catalyst shall be determined through regulated sampling and testing of the material. The frequency of sampling and catalyst replacement shall be increased with failing or borderline test results; or the schedule may be adjusted or extended with the demonstration of continuous compliant test results.

C. Monitoring and/or Record keeping Requirements

1. The permittee shall properly install, operate, and maintain equipment to continuously monitor and record the pressure drop, in inches of water, across the baghouse during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the pressure drop, in inches of water, across the baghouse on a daily basis.
2. Whenever the monitored value for the pressure drop deviates from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the

date(s) the investigation was conducted, the names of the personnel who conducted the investigation and the findings and recommendations.

3. In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the pressure drop readings immediately after the corrective action and the names of the personnel who performed the work. Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.
4. The acceptable range for the pressure drop across the baghouse shall be based upon the manufacturer's specifications until such time as any required emission testing is conducted.
5. This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the range based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated in this permit by means of an administrative modification.
6. Until compliance testing has been conducted, as required in this permit, the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall be maintained at the average temperature recommended by the manufacturer of the incinerator for the catalyst used, with any modifications deemed necessary by the permittee. Following compliance testing, the average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance; and the average temperature difference across the catalyst bed, for any 3-hour block of time the emissions unit is in operation, shall not be less than 80 percent of the average temperature difference maintained during the most recent emissions test that

demonstrated the emissions unit to be in compliance.

7. The permittee shall install, operate, and maintain continuous temperature monitors and recorder(s) which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 5 degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and calculate the average temperature of the process vent stream immediately before the catalyst bed and the average temperature difference across the catalyst bed, each of the eight, 3-hour blocks of time during each day of operation, and shall record and maintain the following information each day:
 - a. all 3-hour blocks of time, when the emissions unit was in operation, during which the average temperature of the process vent stream immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - b. all 3-hour blocks of time, when the emissions unit was in operation, during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance; and
 - c. a log of the downtime for the capture (collection) system, catalytic incinerator, and monitoring equipment when the associated emissions unit was in operation.

These records shall be maintained at the facility for a period of three years.

8. The permittee shall develop and maintain an inspection, maintenance, and monitoring plan for the catalytic oxidizer. The plan shall include a sampling and replacement schedule for the catalyst. The permittee shall sample, test, and maintain records of the testing results of the viability and condition of the catalyst. Samples of the catalyst shall be collected either as a representative sample, taken from different layers of the bed/monolith; or may be taken as a single sample from the leading edge of the bed, where it is first exposed to the process gas. The permittee shall initially use the operational history of similar systems and/or vendor recommendations to determine the

Emissions Unit ID: P003

frequency of sampling and testing for the performance and condition of the catalyst. The frequency of sampling may be adjusted or reduced as compliant test data and the incinerator's site-specific catalyst replacement schedule is developed. The frequency of sampling shall be increased with any testing results showing a VOC destruction efficiency equal to or less than that required to maintain the control efficiency requirements contained in this permit. The permittee shall maintain records of the following information for the catalyst:

- a. the date the catalyst sample is taken;
- b. the sampling method; and if a representative sample, the number of samples and from which sample cores, layers, or levels taken;
- c. the testing methods conducted for the VOC destruction efficiency and the level of contamination/poisoning (Si, P, Cl, etc.);
- d. test results for the VOC destruction efficiency, level of contamination or poisoning, and surface area loss (all in %); and
- e. the date(s) of catalyst replacement; and if only partial, the amount or percent of the total catalyst replaced.

These records shall be maintained at the facility for a period of three years.

9. Whenever the monitored value for the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed deviates from the ranges established by the most recent compliance testing, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation and the findings and recommendations.
10. In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable ranges established by the most recent compliance testing, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes)

during which there was a deviation, the difference across the catalyst bed, for any 3-hour block of time, immediately after the corrective action and the names of the personnel who performed the work. Investigation and records required by this paragraph do not eliminate the need to comply with the requirement of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

11. The acceptable ranges for the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed shall be based upon the manufacturer's specifications until the required emission testing is conducted.
12. The permittee maintain monthly records of the following information for the entire facility (includes emissions units P003, P004, P005, P006, P007 and P008):
 - a. the name and identification number of each HAP containing material employed;
 - b. the individual HAP content for each HAP, in pounds of individual HAP per gallon;
 - c. the total combined HAP content, in pounds of combined HAPs per gallon [sum of all the individual HAP contents from b];
 - d. the number of pounds of each HAP containing material employed;
 - e. the total individual HAP usage for each HAP from all HAP containing material, in pounds or tons per month [for each HAP, the sum of (b x d) for each material];
 - f. the total combined HAP usage from all HAP containing materials, in pounds or tons per month [the sum of (e x d) for each material]; and
 - g. the updated rolling, 12-month summation of emissions for each individual HAP, in pounds or tons, and for all combined HAPs, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months. For the first twelve months following the issuance of the permit, this shall be a cumulative total for all months since the issuance of the PTI.

*A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting the CDAQ. This information does not have to be kept on an individual basis.

Emissions Unit ID: P003

13. The permit to install for this emissions unit was evaluated based on the actual 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 to this emissions unit for each toxic pollutant, using data from the permit to install application, and modeling was performed for the toxic pollutant(s) emitted at over a ton per year using the SCREEN 3.0 model or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the use of the SCREEN 3.0 (or other approved) model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as required in Engineering Guide #70. The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Styrene

TLV (mg/m³): 85.20

Maximum Hourly Emission Rate (lbs/hr): 0.68

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 32.21MAGLC (ug/m³): 2028

14. 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 or the use of new materials, that would result in the emission of a compound or chemical with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled, as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIH's) handbook entitled "TLVs and BEIs" ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices");
 - 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.)

15. 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 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) meet(s) the definition of a "modification" under other provisions of the rule, 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 the 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.

D. Reporting Requirements

1. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
 - a. each period of time when the pressure drop across the baghouse was outside of the range specified by the manufacturer;
 - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
 - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and

- d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or corrective action.

These quarterly reports shall be submitted (i.e. postmarked) by January 31, April 30, July 31 and October 31 of each year; and each report shall cover the previous calendar quarter.

2. The permittee shall submit deviation (excursion) reports for the entire facility (includes emissions units P003, P004, P005, P006, P007 and P008) which include an identification of each month during which the rolling, 12-month individual HAP emissions exceed 9.9 tpy (and combined HAPs emissions exceed 24.5 tpy) based on a rolling, 12-month summation and the actual rolling, 12-month individual (and combined) HAP emissions for each such month.

These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.

3. The permittee shall submit quarterly summaries that identify all 3-hour blocks of time, when the emissions unit was in operation, during which:
 - a. the average temperature of the process vent stream immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - b. the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - c. any records of downtime for the capture (collection) system, the catalytic incinerator, and/or the monitoring equipment when the emissions unit was in operation;
 - d. an identification of each incident of deviation described in (a), (b) and (c) above where a prompt investigation was not conducted;
 - e. an identification of each incident of deviation described in (a), (b) and (c) above where prompt corrective action, that would bring the field into compliance with the acceptable ranges and operation, was determined to be necessary and was not taken; and

- f. an identification of each incident of deviation described in (a), (b) and (c) above where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31 and October 31 of each year; and each report shall cover the previous calendar quarter.

4. The permittee shall submit quarterly summaries that identify any test results demonstrating that the VOC destruction efficiency of the catalyst was less than that required to maintain compliance with the total control efficiency requirements of this permit. This report shall include the date the non-compliant test results were received, the date the spent or poisoned catalyst was replaced, as well as, the hours of operation of the emissions unit between the catalyst sampling and its replacement. These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.
5. The permittee shall also submit quarterly summaries that identify all periods of time, during the previous calendar quarter, in which sample(s) of the catalyst were not collected and testing was not conducted at the most current frequency developed, monitored, and required in the catalyst maintenance plan; and/or records were not maintained for the catalyst system as required in this permit. These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.

E. Testing Requirements

1. Compliance with the emission limitation(s) in Section A of these terms and conditions shall be determined in accordance with the following method(s):
- a. **Emission Limitation**
 OC emissions shall be less than 10.0 TPY

Applicable Compliance Method

Compliance shall be determined from the testing requirements in section E.2 below.

The permittee demonstrated compliance with the annual allowable OC emission limitation initially by multiplying the maximum hourly controlled OC rate $[(250 \text{ gal/hr})(10 \text{ lbs OC/gal})(1 \text{ ton}/2000 \text{ lbs})(30 \text{ lbs/ton})(1 - 0.95) = 1.87 \text{ lbs OC/hr}]$ by

Emissions Unit ID: P003

the maximum annual number of hours of operation (8760 hrs/yr), and then dividing by 2000 lbs/ton.

b. **Emission Limitation**

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

Applicable Compliance Method

Compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03 (B)(1) using the methods and procedures specified in U.S. EPA Reference Method 9.

c. **Emission Limitation**

PE shall not exceed 0.551 lb/hr.

Applicable Compliance Method

Compliance with the emission limitation shall be determined by using the following equation:

$$E = (B)(P)(1 \text{ ton}/2000 \text{ lbs})(EF)(1-CE)$$

where,

E = emissions rate (lbs/hr)

B = batch size (gallons/hr), 250 gal/hr maximum

P = pigment concentration (lbs/gal), 5 lbs PM/gal maximum

EF = emissions factor (lbs/ton), taken from AP 42 vol 1, 5th ed. 6.4.1

CE = control efficiency of dust collector (99 %)

If required by the Ohio EPA or CDAQ, compliance with allowable particulate emissions limit shall be determined in accordance with U.S. EPA Reference Methods 1 through 5 of 40 CFR Part 60, Appendix A.

d. **Emission Limitation**

HAP emissions from emissions units P003, P004, P005, P006, P007 and P008 shall not exceed 9.9 TPY for any single HAP and 24.5 TPY for any combination of HAPs.

Applicable Compliance Method

Compliance shall be determined from the record keeping and reporting sections C.12 and D.2 above, respectively.

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 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of the emissions unit:
 - b. The emission testing shall be conducted to demonstrate compliance with the emissions limitation and overall control efficiency limitation for organic compounds.
 - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s) for organic compounds:

Methods 1 through 4 and 25 or 25A, as applicable, of 40 CFR Part 60, Appendix A, as appropriate.

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

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

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

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testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the CDAQ within 30 days following the completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate CDAQ.

F. Miscellaneous Requirements

None.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- 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>
P004 - Mixer station, portable process tanks up to 500 gallons, tank cleaning station, container filling station, ventilation system with dust collector and fume incinerator	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)(1)	Particulate emissions (PE) shall not exceed 0.551 lb/hr.
	OAC rule 3745-21-07(G)(2)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-02(A).
	OAC rule 3745-31-05(C) Synthetic Minor to avoid Title V and MACT subpart HHHHH	See A.2.a below. Organic compound (OC) emissions shall be less than 10.0 tons per year (TPY). See A.2.b below.
	ORC 3704.03(T)(4)	See A.2.c below

2. Additional Terms and Conditions

- 2.a The total allowable usage and emissions of Hazardous Air Pollutants (HAPs) as

identified in Section 112(b) of Title III of the Clean Air Act, from emissions units at this facility (P003, P004, P005, P006, P007 and P008) shall not exceed 9.9 tons per year for any individual HAP or 24.5 tons per year for a combination of HAPs. Compliance with the above limitations shall be based upon a rolling, 12-month summation.

- 2.b** Permit to Install 13-04656 for this air contaminant source takes into account the use of a catalytic incinerator, whenever this air contaminant source is in operation, with a minimum control efficiency of 95%, by weight for OC, as a voluntary restriction as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3).
- 2.c** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the calculated annual emission rate for particulate emissions is less than ten tons per year taking into account the federally enforceable rule limit of 0.551 lbs PE/hr under OAC rule 3745-17-11(B)(1).

B. Operational Restrictions

1. The permittee shall maintain the viability of the catalyst system by testing and replacing the catalyst as required in this permit. The longevity of the catalyst shall be determined through regulated sampling and testing of the material. The frequency of sampling and catalyst replacement shall be increased with failing or borderline test results; or the schedule may be adjusted or extended with the demonstration of continuous compliant test results.

C. Monitoring and/or Record keeping Requirements

1. The permittee shall properly install, operate, and maintain equipment to continuously monitor and record the pressure drop, in inches of water, across the baghouse during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the pressure drop, in inches of water, across the baghouse on a daily basis.
2. Whenever the monitored value for the pressure drop deviates from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee

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shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation and the findings and recommendations.

3. In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the pressure drop readings immediately after the corrective action and the names of the personnel who performed the work. Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.
4. The acceptable range for the pressure drop across the baghouse shall be based upon the manufacturer's specifications until such time as any required emission testing is conducted.
5. This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the range based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated in this permit by means of an administrative modification.
6. Until compliance testing has been conducted, as required in this permit, the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall be maintained at the average temperature recommended by the manufacturer of the incinerator for the catalyst used, with any modifications deemed necessary by the permittee. Following compliance testing, the average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance; and the average temperature difference across the catalyst bed, for any 3-hour block of time the

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emissions unit is in operation, shall not be less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance.

7. The permittee shall install, operate, and maintain continuous temperature monitors and recorder(s) which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 5 degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and calculate the average temperature of the process vent stream immediately before the catalyst bed and the average temperature difference across the catalyst bed, each of the eight, 3-hour blocks of time during each day of operation, and shall record and maintain the following information each day:
 - a. all 3-hour blocks of time, when the emissions unit was in operation, during which the average temperature of the process vent stream immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - b. all 3-hour blocks of time, when the emissions unit was in operation, during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance; and
 - c. a log of the downtime for the capture (collection) system, catalytic incinerator, and monitoring equipment when the associated emissions unit was in operation.

These records shall be maintained at the facility for a period of three years.

8. The permittee shall develop and maintain an inspection, maintenance, and monitoring plan for the catalytic oxidizer. The plan shall include a sampling and replacement schedule for the catalyst. The permittee shall sample, test, and maintain records of the testing results of the viability and condition of the catalyst. Samples of the catalyst shall be collected either as a representative sample, taken from different layers of the bed/monolith; or may be taken as a single sample from the leading edge of the bed, where it is first exposed to the process gas. The permittee shall initially use the

operational history of similar systems and/or vendor recommendations to determine the frequency of sampling and testing for the performance and condition of the catalyst. The frequency of sampling may be adjusted or reduced as compliant test data and the incinerator's site-specific catalyst replacement schedule is developed. The frequency of sampling shall be increased with any testing results showing a VOC destruction efficiency equal to or less than that required to maintain the control efficiency requirements contained in this permit. The permittee shall maintain records of the following information for the catalyst:

- a. the date the catalyst sample is taken;
- b. the sampling method; and if a representative sample, the number of samples and from which sample cores, layers, or levels taken;
- c. the testing methods conducted for the VOC destruction efficiency and the level of contamination/poisoning (Si, P, Cl, etc.);
- d. test results for the VOC destruction efficiency, level of contamination or poisoning, and surface area loss (all in %); and
- e. the date(s) of catalyst replacement; and if only partial, the amount or percent of the total catalyst replaced.

These records shall be maintained at the facility for a period of three years.

9. Whenever the monitored value for the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed deviates from the ranges established by the most recent compliance testing, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation and the findings and recommendations.
10. In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable ranges established by the most recent compliance testing, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each

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corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the difference across the catalyst bed, for any 3-hour block of time, immediately after the corrective action and the names of the personnel who performed the work. Investigation and records required by this paragraph do not eliminate the need to comply with the requirement of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

11. The acceptable ranges for the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed shall be based upon the manufacturer's specifications until the required emission testing is conducted.
12. The permittee maintain monthly records of the following information for the entire facility (includes emissions units P003, P004, P005, P006, P007 and P008):
 - a. the name and identification number of each HAP containing material employed;
 - b. the individual HAP content for each HAP, in pounds of individual HAP per gallon;
 - c. the total combined HAP content, in pounds of combined HAPs per gallon [sum of all the individual HAP contents from b];
 - d. the number of pounds of each HAP containing material employed;
 - e. the total individual HAP usage for each HAP from all HAP containing material, in pounds or tons per month [for each HAP, the sum of (b x d) for each material];
 - f. the total combined HAP usage from all HAP containing materials, in pounds or tons per month [the sum of (e x d) for each material]; and
 - g. the updated rolling, 12-month summation of emissions for each individual HAP, in pounds or tons, and for all combined HAPs, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months. For the first twelve months following the issuance of the permit, this shall be a cumulative total for all months since the issuance of the PTI.

*A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting the CDAQ. This information does not have to be kept on an individual basis.

13. The permit to install for this emissions unit was evaluated based on the actual 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 to this emissions unit for each toxic pollutant, using data from the permit to install application, and modeling was performed for the toxic pollutant(s) emitted at over a ton per year using the SCREEN 3.0 model or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the use of the SCREEN 3.0 (or other approved) model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as required in Engineering Guide #70. The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Styrene

TLV (mg/m³): 85.20

Maximum Hourly Emission Rate (lbs/hr): 0.68

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 32.21

MAGLC (ug/m³): 2028

14. 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 or the use of new materials, that would result in the emission of a compound or chemical with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled, as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIH's) handbook entitled "TLVs and BEIs" ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices");
 - 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

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- 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.)
15. 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 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) meet(s) the definition of a "modification" under other provisions of the rule, 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 the 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.

D. Reporting Requirements

1. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
 - a. each period of time when the pressure drop across the baghouse was outside of the range specified by the manufacturer;
 - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
 - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the pressure drop into compliance with the

acceptable range, was determined to be necessary and was not taken; and

- d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or corrective action.

These quarterly reports shall be submitted (i.e. postmarked) by January 31, April 30, July 31 and October 31 of each year; and each report shall cover the previous calendar quarter.

2. The permittee shall submit deviation (excursion) reports for the entire facility (includes emissions units P003, P004, P005, P006, P007 and P008) which include an identification of each month during which the rolling, 12-month individual HAP emissions exceed 9.9 tpy (and combined HAPs emissions exceed 24.5 tpy) based on a rolling, 12-month summation and the actual rolling, 12-month individual (and combined) HAP emissions for each such month.

These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.

3. The permittee shall submit quarterly summaries that identify all 3-hour blocks of time, when the emissions unit was in operation, during which:
 - a. the average temperature of the process vent stream immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - b. the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - c. any records of downtime for the capture (collection) system, the catalytic incinerator, and/or the monitoring equipment when the emissions unit was in operation;
 - d. an identification of each incident of deviation described in (a), (b) and (c) above where a prompt investigation was not conducted;
 - e. an identification of each incident of deviation described in (a), (b) and (c) above where prompt corrective action, that would bring the field into compliance with the

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acceptable ranges and operation, was determined to be necessary and was not taken; and

- f. an identification of each incident of deviation described in (a), (b) and (c) above where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31 and October 31 of each year; and each report shall cover the previous calendar quarter.

4. The permittee shall submit quarterly summaries that identify any test results demonstrating that the VOC destruction efficiency of the catalyst was less than that required to maintain compliance with the total control efficiency requirements of this permit. This report shall include the date the non-compliant test results were received, the date the spent or poisoned catalyst was replaced, as well as, the hours of operation of the emissions unit between the catalyst sampling and its replacement. These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.
5. The permittee shall also submit quarterly summaries that identify all periods of time, during the previous calendar quarter, in which sample(s) of the catalyst were not collected and testing was not conducted at the most current frequency developed, monitored, and required in the catalyst maintenance plan; and/or records were not maintained for the catalyst system as required in this permit. These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.

E. Testing Requirements

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

- a. **Emission Limitation**
 OC emissions shall be less than 10.0 TPY

Applicable Compliance Method

Compliance shall be determined from the testing requirements in section E.2 below.

The permittee demonstrated compliance with the annual allowable OC emission

limitation initially by multiplying the maximum hourly controlled OC rate [(250 gal/hr)(10 lbs OC/gal)(1 ton/2000 lbs)(30 lbs/ton)(1 - 0.95) = 1.87 lbs OC/hr] by the maximum annual number of hours of operation (8760 hrs/yr), and then dividing by 2000 lbs/ton.

b. **Emission Limitation**

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

Applicable Compliance Method

Compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03 (B)(1) using the methods and procedures specified in U.S. EPA Reference Method 9.

c. **Emission Limitation**

PE shall not exceed 0.551 lb/hr.

Applicable Compliance Method

Compliance with the emission limitation shall be determined by using the following equation:

$$E = (B)(P)(1 \text{ ton}/2000 \text{ lbs})(EF)(1-CE)$$

where,

E = emissions rate (lbs/hr)

B = batch size (gallons/hr), 250 gal/hr maximum

P = pigment concentration (lbs/gal), 5 lbs PM/gal maximum

EF = emissions factor (lbs/ton), taken from AP 42 vol 1, 5th ed. 6.4.1

CE = control efficiency of dust collector (99 %)

If required by the Ohio EPA or CDAQ, compliance with allowable particulate emissions limit shall be determined in accordance with U.S. EPA Reference Methods 1 through 5 of 40 CFR Part 60, Appendix A.

d. **Emission Limitation**

HAP emissions from emissions units P003, P004, P005, P006, P007 and P008 shall not exceed 9.9 TPY for any single HAP and 24.5 TPY for any combination of HAPs.

Applicable Compliance Method

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Compliance shall be determined from the record keeping and reporting sections C.12 and D.2 above, respectively.

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 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of the emissions unit:
 - b. The emission testing shall be conducted to demonstrate compliance with the emissions limitation and overall control efficiency limitation for organic compounds.
 - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s) for organic compounds:

Methods 1 through 4 and 25 or 25A, as applicable, of 40 CFR Part 60, Appendix A, as appropriate.

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

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

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

- f. Personnel from the CDAQ shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the CDAQ within 30 days following the completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate CDAQ.

F. Miscellaneous Requirements

None.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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>
P005 - Mixer station, portable process tanks up to 500 gallons, tank cleaning station, container filling station, ventilation system with dust collector and fume incinerator	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)(1)	Particulate emissions (PE) shall not exceed 0.551 lb/hr.
	OAC rule 3745-21-07(G)(2)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-02(A).
	OAC rule 3745-31-05(C) Synthetic Minor to avoid Title V and MACT subpart HHHHH	See A.2.a below. Organic compound (OC) emissions shall be less than 10.0 tons per year (TPY). See A.2.b below.
	ORC 3704.03(T)(4)	See A.2.c below.

2. Additional Terms and Conditions

- 2.a The total allowable usage and emissions of Hazardous Air Pollutants (HAPs) as identified in Section 112(b) of Title III of the Clean Air Act, from emissions units at

Emissions Unit ID: **P005**

this facility (P003, P004, P005, P006, P007 and P008) shall not exceed 9.9 tons per year for any individual HAP or 24.5 tons per year for a combination of HAPs. Compliance with the above limitations shall be based upon a rolling, 12-month summation.

- 2.b** Permit to Install 13-04656 for this air contaminant source takes into account the use of a catalytic incinerator, whenever this air contaminant source is in operation, with a minimum control efficiency of 95%, by weight for OC, as a voluntary restriction as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3).
- 2.c** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the calculated annual emission rate for particulate emissions is less than ten tons per year taking into account the federally enforceable rule limit of 0.551 lbs PE/hr under OAC rule 3745-17-11(B)(1).

B. Operational Restrictions

1. The permittee shall maintain the viability of the catalyst system by testing and replacing the catalyst as required in this permit. The longevity of the catalyst shall be determined through regulated sampling and testing of the material. The frequency of sampling and catalyst replacement shall be increased with failing or borderline test results; or the schedule may be adjusted or extended with the demonstration of continuous compliant test results.

C. Monitoring and/or Record keeping Requirements

1. The permittee shall properly install, operate, and maintain equipment to continuously monitor and record the pressure drop, in inches of water, across the baghouse during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the pressure drop, in inches of water, across the baghouse on a daily basis.
2. Whenever the monitored value for the pressure drop deviates from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the

investigation was conducted, the names of the personnel who conducted the investigation and the findings and recommendations.

3. In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the pressure drop readings immediately after the corrective action and the names of the personnel who performed the work. Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.
4. The acceptable range for the pressure drop across the baghouse shall be based upon the manufacturer's specifications until such time as any required emission testing is conducted.
5. This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the range based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated in this permit by means of an administrative modification.
6. Until compliance testing has been conducted, as required in this permit, the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall be maintained at the average temperature recommended by the manufacturer of the incinerator for the catalyst used, with any modifications deemed necessary by the permittee. Following compliance testing, the average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance; and the average temperature difference across the catalyst bed, for any 3-hour block of time the emissions unit is in operation, shall not be less than 80 percent of the average

Emissions Unit ID: P005

temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance.

7. The permittee shall install, operate, and maintain continuous temperature monitors and recorder(s) which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 5 degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and calculate the average temperature of the process vent stream immediately before the catalyst bed and the average temperature difference across the catalyst bed, each of the eight, 3-hour blocks of time during each day of operation, and shall record and maintain the following information each day:
 - a. all 3-hour blocks of time, when the emissions unit was in operation, during which the average temperature of the process vent stream immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - b. all 3-hour blocks of time, when the emissions unit was in operation, during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance; and
 - c. a log of the downtime for the capture (collection) system, catalytic incinerator, and monitoring equipment when the associated emissions unit was in operation.

These records shall be maintained at the facility for a period of three years.

8. The permittee shall develop and maintain an inspection, maintenance, and monitoring plan for the catalytic oxidizer. The plan shall include a sampling and replacement schedule for the catalyst. The permittee shall sample, test, and maintain records of the testing results of the viability and condition of the catalyst. Samples of the catalyst shall be collected either as a representative sample, taken from different layers of the bed/monolith; or may be taken as a single sample from the leading edge of the bed, where it is first exposed to the process gas. The permittee shall initially use the operational history of similar systems and/or vendor recommendations to determine the

frequency of sampling and testing for the performance and condition of the catalyst. The frequency of sampling may be adjusted or reduced as compliant test data and the incinerator's site-specific catalyst replacement schedule is developed. The frequency of sampling shall be increased with any testing results showing a VOC destruction efficiency equal to or less than that required to maintain the control efficiency requirements contained in this permit. The permittee shall maintain records of the following information for the catalyst:

- a. the date the catalyst sample is taken;
- b. the sampling method; and if a representative sample, the number of samples and from which sample cores, layers, or levels taken;
- c. the testing methods conducted for the VOC destruction efficiency and the level of contamination/poisoning (Si, P, Cl, etc.);
- d. test results for the VOC destruction efficiency, level of contamination or poisoning, and surface area loss (all in %); and
- e. the date(s) of catalyst replacement; and if only partial, the amount or percent of the total catalyst replaced.

These records shall be maintained at the facility for a period of three years.

9. Whenever the monitored value for the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed deviates from the ranges established by the most recent compliance testing, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation and the findings and recommendations.
10. In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable ranges established by the most recent compliance testing, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed,

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the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the difference across the catalyst bed, for any 3-hour block of time, immediately after the corrective action and the names of the personnel who performed the work. Investigation and records required by this paragraph do not eliminate the need to comply with the requirement of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

11. The acceptable ranges for the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed shall be based upon the manufacturer's specifications until the required emission testing is conducted.
12. The permittee maintain monthly records of the following information for the entire facility (includes emissions units P003, P004, P005, P006, P007 and P008):
 - a. the name and identification number of each HAP containing material employed;
 - b. the individual HAP content for each HAP, in pounds of individual HAP per gallon;
 - c. the total combined HAP content, in pounds of combined HAPs per gallon [sum of all the individual HAP contents from b];
 - d. the number of pounds of each HAP containing material employed;
 - e. the total individual HAP usage for each HAP from all HAP containing material, in pounds or tons per month [for each HAP, the sum of (b x d) for each material];
 - f. the total combined HAP usage from all HAP containing materials, in pounds or tons per month [the sum of (c x d) for each material]; and
 - g. the updated rolling, 12-month summation of emissions for each individual HAP, in pounds or tons, and for all combined HAPs, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months. For the first twelve months following the issuance of the permit, this shall be a cumulative total for all months since the issuance of the PTI.

*A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting the CDAQ. This information does not have to be kept on an individual basis.

13. The permit to install for this emissions unit was evaluated based on the actual 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 to this emissions unit for each toxic pollutant, using data from the permit to install application, and modeling was performed for the toxic pollutant(s) emitted at over a ton per year using the SCREEN 3.0 model or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the use of the SCREEN 3.0 (or other approved) model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as required in Engineering Guide #70. The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Styrene

TLV (mg/m³): 85.20

Maximum Hourly Emission Rate (lbs/hr): 0.68

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 32.21

MAGLC (ug/m³): 2028

14. 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 or the use of new materials, that would result in the emission of a compound or chemical with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled, as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIH's) handbook entitled "TLVs and BEIs" ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices");
 - 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.)

15. 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 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) meet(s) the definition of a "modification" under other provisions of the rule, 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 the 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.

D. Reporting Requirements

1. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
 - a. each period of time when the pressure drop across the baghouse was outside of the range specified by the manufacturer;
 - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
 - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and

- d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or corrective action.

These quarterly reports shall be submitted (i.e. postmarked) by January 31, April 30, July 31 and October 31 of each year; and each report shall cover the previous calendar quarter.

2. The permittee shall submit deviation (excursion) reports for the entire facility (includes emissions units P003, P004, P005, P006, P007 and P008) which include an identification of each month during which the rolling, 12-month individual HAP emissions exceed 9.9 tpy (and combined HAPs emissions exceed 24.5 tpy) based on a rolling, 12-month summation and the actual rolling, 12-month individual (and combined) HAP emissions for each such month.

These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.

3. The permittee shall submit quarterly summaries that identify all 3-hour blocks of time, when the emissions unit was in operation, during which:
 - a. the average temperature of the process vent stream immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - b. the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - c. any records of downtime for the capture (collection) system, the catalytic incinerator, and/or the monitoring equipment when the emissions unit was in operation;
 - d. an identification of each incident of deviation described in (a), (b) and (c) above where a prompt investigation was not conducted;
 - e. an identification of each incident of deviation described in (a), (b) and (c) above where prompt corrective action, that would bring the field into compliance with the acceptable ranges and operation, was determined to be necessary and was not

taken; and

- f. an identification of each incident of deviation described in (a), (b) and (c) above where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31 and October 31 of each year; and each report shall cover the previous calendar quarter.

4. The permittee shall submit quarterly summaries that identify any test results demonstrating that the VOC destruction efficiency of the catalyst was less than that required to maintain compliance with the total control efficiency requirements of this permit. This report shall include the date the non-compliant test results were received, the date the spent or poisoned catalyst was replaced, as well as, the hours of operation of the emissions unit between the catalyst sampling and its replacement. These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.
5. The permittee shall also submit quarterly summaries that identify all periods of time, during the previous calendar quarter, in which sample(s) of the catalyst were not collected and testing was not conducted at the most current frequency developed, monitored, and required in the catalyst maintenance plan; and/or records were not maintained for the catalyst system as required in this permit. These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.

E. Testing Requirements

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

- a. **Emission Limitation**
 OC emissions shall be less than 10.0 TPY

Applicable Compliance Method

Compliance shall be determined from the testing requirements in section E.2 below.

The permittee demonstrated compliance with the annual allowable OC emission limitation initially by multiplying the maximum hourly controlled OC rate [(250

gal/hr)(10 lbs OC/gal)(1 ton/2000 lbs)(30 lbs/ton)(1 - 0.95) = 1.87 lbs OC/hr] by the maximum annual number of hours of operation (8760 hrs/yr), and then dividing by 2000 lbs/ton.

b. **Emission Limitation**

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

Applicable Compliance Method

Compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03 (B)(1) using the methods and procedures specified in U.S. EPA Reference Method 9.

c. **Emission Limitation**

PE shall not exceed 0.551 lb/hr.

Applicable Compliance Method

Compliance with the emission limitation shall be determined by using the following equation:

$$E = (B)(P)(1 \text{ ton}/2000 \text{ lbs})(EF)(1-CE)$$

where,

E = emissions rate (lbs/hr)

B = batch size (gallons/hr), 250 gal/hr maximum

P = pigment concentration (lbs/gal), 5 lbs PM/gal maximum

EF = emissions factor (lbs/ton), taken from AP 42 vol 1, 5th ed. 6.4.1

CE = control efficiency of dust collector (99 %)

If required by the Ohio EPA or CDAQ, compliance with allowable particulate emissions limit shall be determined in accordance with U.S. EPA Reference Methods 1 through 5 of 40 CFR Part 60, Appendix A.

d. **Emission Limitation**

HAP emissions from emissions units P003, P004, P005, P006, P007 and P008 shall not exceed 9.9 TPY for any single HAP and 24.5 TPY for any combination of HAPs.

Applicable Compliance Method

Compliance shall be determined from the record keeping and reporting sections

C.12 and D.2 above, respectively.

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 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of the emissions unit:
- b. The emission testing shall be conducted to demonstrate compliance with the emissions limitation and overall control efficiency limitation for organic compounds.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s) for organic compounds:

Methods 1 through 4 and 25 or 25A, as applicable, of 40 CFR Part 60, Appendix A, as appropriate.

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

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

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

- f. Personnel from the CDAQ shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the CDAQ within 30 days following the completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate CDAQ.

F. Miscellaneous Requirements

None.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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>
P006 - Mixer station, portable process tanks up to 500 gallons, tank cleaning station, container filling station, ventilation system with dust collector and fume incinerator	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)(1)	Particulate emissions (PE) shall not exceed 0.551 lb/hr.
	OAC rule 3745-21-07(G)(2)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-02(A).
	OAC rule 3745-31-05(C) Synthetic Minor to avoid Title V and MACT subpart HHHHH	See A.2.a below. Organic compound (OC) emissions shall be less than 10.0 tons per year (TPY). See A.2.b below.
	ORC 3704.03(T)(4)	See A.2.c below.

2. Additional Terms and Conditions

- 2.a The total allowable usage and emissions of Hazardous Air Pollutants (HAPs) as identified in Section 112(b) of Title III of the Clean Air Act, from emissions units at

Emissions Unit ID: **P006**

this facility (P003, P004, P005, P006, P007 and P008) shall not exceed 9.9 tons per year for any individual HAP or 24.5 tons per year for a combination of HAPs. Compliance with the above limitations shall be based upon a rolling, 12-month summation.

- 2.b** Permit to Install 13-04656 for this air contaminant source takes into account the use of a catalytic incinerator, whenever this air contaminant source is in operation, with a minimum control efficiency of 95%, by weight for OC, as a voluntary restriction as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3).
- 2.c** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the calculated annual emission rate for particulate emissions is less than ten tons per year taking into account the federally enforceable rule limit of 0.551 lbs PE/hr under OAC rule 3745-17-11(B)(1).

B. Operational Restrictions

1. The permittee shall maintain the viability of the catalyst system by testing and replacing the catalyst as required in this permit. The longevity of the catalyst shall be determined through regulated sampling and testing of the material. The frequency of sampling and catalyst replacement shall be increased with failing or borderline test results; or the schedule may be adjusted or extended with the demonstration of continuous compliant test results.

C. Monitoring and/or Record keeping Requirements

1. The permittee shall properly install, operate, and maintain equipment to continuously monitor and record the pressure drop, in inches of water, across the baghouse during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the pressure drop, in inches of water, across the baghouse on a daily basis.
2. Whenever the monitored value for the pressure drop deviates from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the

investigation was conducted, the names of the personnel who conducted the investigation and the findings and recommendations.

3. In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the pressure drop readings immediately after the corrective action and the names of the personnel who performed the work. Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.
4. The acceptable range for the pressure drop across the baghouse shall be based upon the manufacturer's specifications until such time as any required emission testing is conducted.
5. This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the range based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated in this permit by means of an administrative modification.
6. Until compliance testing has been conducted, as required in this permit, the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall be maintained at the average temperature recommended by the manufacturer of the incinerator for the catalyst used, with any modifications deemed necessary by the permittee. Following compliance testing, the average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance; and the average temperature difference across the catalyst bed, for any 3-hour block of time the emissions unit is in operation, shall not be less than 80 percent of the average

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temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance.

7. The permittee shall install, operate, and maintain continuous temperature monitors and recorder(s) which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 5 degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and calculate the average temperature of the process vent stream immediately before the catalyst bed and the average temperature difference across the catalyst bed, each of the eight, 3-hour blocks of time during each day of operation, and shall record and maintain the following information each day:
 - a. all 3-hour blocks of time, when the emissions unit was in operation, during which the average temperature of the process vent stream immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - b. all 3-hour blocks of time, when the emissions unit was in operation, during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance; and
 - c. a log of the downtime for the capture (collection) system, catalytic incinerator, and monitoring equipment when the associated emissions unit was in operation.

These records shall be maintained at the facility for a period of three years.

8. The permittee shall develop and maintain an inspection, maintenance, and monitoring plan for the catalytic oxidizer. The plan shall include a sampling and replacement schedule for the catalyst. The permittee shall sample, test, and maintain records of the testing results of the viability and condition of the catalyst. Samples of the catalyst shall be collected either as a representative sample, taken from different layers of the bed/monolith; or may be taken as a single sample from the leading edge of the bed, where it is first exposed to the process gas. The permittee shall initially use the operational history of similar systems and/or vendor recommendations to determine the

frequency of sampling and testing for the performance and condition of the catalyst. The frequency of sampling may be adjusted or reduced as compliant test data and the incinerator's site-specific catalyst replacement schedule is developed. The frequency of sampling shall be increased with any testing results showing a VOC destruction efficiency equal to or less than that required to maintain the control efficiency requirements contained in this permit. The permittee shall maintain records of the following information for the catalyst:

- a. the date the catalyst sample is taken;
- b. the sampling method; and if a representative sample, the number of samples and from which sample cores, layers, or levels taken;
- c. the testing methods conducted for the VOC destruction efficiency and the level of contamination/poisoning (Si, P, Cl, etc.);
- d. test results for the VOC destruction efficiency, level of contamination or poisoning, and surface area loss (all in %); and
- e. the date(s) of catalyst replacement; and if only partial, the amount or percent of the total catalyst replaced.

These records shall be maintained at the facility for a period of three years.

9. Whenever the monitored value for the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed deviates from the ranges established by the most recent compliance testing, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation and the findings and recommendations.
10. In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable ranges established by the most recent compliance testing, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed,

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the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the difference across the catalyst bed, for any 3-hour block of time, immediately after the corrective action and the names of the personnel who performed the work. Investigation and records required by this paragraph do not eliminate the need to comply with the requirement of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

11. The acceptable ranges for the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed shall be based upon the manufacturer's specifications until the required emission testing is conducted.
12. The permittee maintain monthly records of the following information for the entire facility (includes emissions units P003, P004, P005, P006, P007 and P008):
 - a. the name and identification number of each HAP containing material employed;
 - b. the individual HAP content for each HAP, in pounds of individual HAP per gallon;
 - c. the total combined HAP content, in pounds of combined HAPs per gallon [sum of all the individual HAP contents from b];
 - d. the number of pounds of each HAP containing material employed;
 - e. the total individual HAP usage for each HAP from all HAP containing material, in pounds or tons per month [for each HAP, the sum of (b x d) for each material];
 - f. the total combined HAP usage from all HAP containing materials, in pounds or tons per month [the sum of (c x d) for each material]; and
 - g. the updated rolling, 12-month summation of emissions for each individual HAP, in pounds or tons, and for all combined HAPs, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months. For the first twelve months following the issuance of the permit, this shall be a cumulative total for all months since the issuance of the PTI.

*A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting the CDAQ. This information does not have to be kept on an individual basis.

13. The permit to install for this emissions unit was evaluated based on the actual 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 to this emissions unit for each toxic pollutant, using data from the permit to install application, and modeling was performed for the toxic pollutant(s) emitted at over a ton per year using the SCREEN 3.0 model or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the use of the SCREEN 3.0 (or other approved) model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as required in Engineering Guide #70. The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Styrene

TLV (mg/m³): 85.20

Maximum Hourly Emission Rate (lbs/hr): 0.68

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 32.21

MAGLC (ug/m³): 2028

14. 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 or the use of new materials, that would result in the emission of a compound or chemical with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled, as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIH's) handbook entitled "TLVs and BEIs" ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices");
 - 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/

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decreased exhaust flow, changes in stack height, changes in stack diameter, etc.)

15. 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 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) meet(s) the definition of a "modification" under other provisions of the rule, 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 the 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.

D. Reporting Requirements

1. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
 - a. each period of time when the pressure drop across the baghouse was outside of the range specified by the manufacturer;
 - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
 - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and

- d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or corrective action.

These quarterly reports shall be submitted (i.e. postmarked) by January 31, April 30, July 31 and October 31 of each year; and each report shall cover the previous calendar quarter.

2. The permittee shall submit deviation (excursion) reports for the entire facility (includes emissions units P003, P004, P005, P006, P007 and P008) which include an identification of each month during which the rolling, 12-month individual HAP emissions exceed 9.9 tpy (and combined HAPs emissions exceed 24.5 tpy) based on a rolling, 12-month summation and the actual rolling, 12-month individual (and combined) HAP emissions for each such month.

These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.

3. The permittee shall submit quarterly summaries that identify all 3-hour blocks of time, when the emissions unit was in operation, during which:
 - a. the average temperature of the process vent stream immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - b. the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - c. any records of downtime for the capture (collection) system, the catalytic incinerator, and/or the monitoring equipment when the emissions unit was in operation;
 - d. an identification of each incident of deviation described in (a), (b) and (c) above where a prompt investigation was not conducted;
 - e. an identification of each incident of deviation described in (a), (b) and (c) above where prompt corrective action, that would bring the field into compliance with the acceptable ranges and operation, was determined to be necessary and was not

taken; and

- f. an identification of each incident of deviation described in (a), (b) and (c) above where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31 and October 31 of each year; and each report shall cover the previous calendar quarter.

4. The permittee shall submit quarterly summaries that identify any test results demonstrating that the VOC destruction efficiency of the catalyst was less than that required to maintain compliance with the total control efficiency requirements of this permit. This report shall include the date the non-compliant test results were received, the date the spent or poisoned catalyst was replaced, as well as, the hours of operation of the emissions unit between the catalyst sampling and its replacement. These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.
5. The permittee shall also submit quarterly summaries that identify all periods of time, during the previous calendar quarter, in which sample(s) of the catalyst were not collected and testing was not conducted at the most current frequency developed, monitored, and required in the catalyst maintenance plan; and/or records were not maintained for the catalyst system as required in this permit. These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.

E. Testing Requirements

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

- a. **Emission Limitation**
 OC emissions shall be less than 10.0 TPY

Applicable Compliance Method

Compliance shall be determined from the testing requirements in section E.2 below.

The permittee demonstrated compliance with the annual allowable OC emission limitation initially by multiplying the maximum hourly controlled OC rate [(250

gal/hr)(10 lbs OC/gal)(1 ton/2000 lbs)(30 lbs/ton)(1 - 0.95) = 1.87 lbs OC/hr] by the maximum annual number of hours of operation (8760 hrs/yr), and then dividing by 2000 lbs/ton.

b. **Emission Limitation**

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

Applicable Compliance Method

Compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03 (B)(1) using the methods and procedures specified in U.S. EPA Reference Method 9.

c. **Emission Limitation**

PE shall not exceed 0.551 lb/hr.

Applicable Compliance Method

Compliance with the emission limitation shall be determined by using the following equation:

$$E = (B)(P)(1 \text{ ton}/2000 \text{ lbs})(EF)(1-CE)$$

where,

E = emissions rate (lbs/hr)

B = batch size (gallons/hr), 250 gal/hr maximum

P = pigment concentration (lbs/gal), 5 lbs PM/gal maximum

EF = emissions factor (lbs/ton), taken from AP 42 vol 1, 5th ed. 6.4.1

CE = control efficiency of dust collector (99 %)

If required by the Ohio EPA or CDAQ, compliance with allowable particulate emissions limit shall be determined in accordance with U.S. EPA Reference Methods 1 through 5 of 40 CFR Part 60, Appendix A.

d. **Emission Limitation**

HAP emissions from emissions units P003, P004, P005, P006, P007 and P008 shall not exceed 9.9 TPY for any single HAP and 24.5 TPY for any combination of HAPs.

Applicable Compliance Method

Compliance shall be determined from the record keeping and reporting sections

C.12 and D.2 above, respectively.

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 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of the emissions unit:
- b. The emission testing shall be conducted to demonstrate compliance with the emissions limitation and overall control efficiency limitation for organic compounds.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s) for organic compounds:

Methods 1 through 4 and 25 or 25A, as applicable, of 40 CFR Part 60, Appendix A, as appropriate.

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

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

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

- f. Personnel from the CDAQ shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the CDAQ within 30 days following the completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate CDAQ.

F. Miscellaneous Requirements

None.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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>
P007 - Mixer station, portable process tanks up to 500 gallons, tank cleaning station, container filling station, ventilation system with dust collector and fume incinerator	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)(1)	Particulate emissions (PE) shall not exceed 0.551 lb/hr.
	OAC rule 3745-21-07(G)(2)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-02(A).
	OAC rule 3745-31-05(C) Synthetic Minor to avoid Title V and MACT subpart HHHHH	See A.2.a below. Organic compound (OC) emissions shall be less than 10.0 tons per year (TPY). See A.2.b below.
	ORC 3704.03(T)(4)	See A.2.c below.

2. Additional Terms and Conditions

- 2.a The total allowable usage and emissions of Hazardous Air Pollutants (HAPs) as identified in Section 112(b) of Title III of the Clean Air Act, from emissions units at

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this facility (P003, P004, P005, P006, P007 and P008) shall not exceed 9.9 tons per year for any individual HAP or 24.5 tons per year for a combination of HAPs. Compliance with the above limitations shall be based upon a rolling, 12-month summation.

- 2.b** Permit to Install 13-04656 for this air contaminant source takes into account the use of a catalytic incinerator, whenever this air contaminant source is in operation, with a minimum control efficiency of 95%, by weight for OC, as a voluntary restriction as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3).
- 2.c** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the calculated annual emission rate for particulate emissions is less than ten tons per year taking into account the federally enforceable rule limit of 0.551 lbs PE/hr under OAC rule 3745-17-11(B)(1).

B. Operational Restrictions

1. The permittee shall maintain the viability of the catalyst system by testing and replacing the catalyst as required in this permit. The longevity of the catalyst shall be determined through regulated sampling and testing of the material. The frequency of sampling and catalyst replacement shall be increased with failing or borderline test results; or the schedule may be adjusted or extended with the demonstration of continuous compliant test results.

C. Monitoring and/or Record keeping Requirements

1. The permittee shall properly install, operate, and maintain equipment to continuously monitor and record the pressure drop, in inches of water, across the baghouse during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the pressure drop, in inches of water, across the baghouse on a daily basis.
2. Whenever the monitored value for the pressure drop deviates from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the

investigation was conducted, the names of the personnel who conducted the investigation and the findings and recommendations.

3. In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the pressure drop readings immediately after the corrective action and the names of the personnel who performed the work. Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.
4. The acceptable range for the pressure drop across the baghouse shall be based upon the manufacturer's specifications until such time as any required emission testing is conducted.
5. This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the range based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated in this permit by means of an administrative modification.
6. Until compliance testing has been conducted, as required in this permit, the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall be maintained at the average temperature recommended by the manufacturer of the incinerator for the catalyst used, with any modifications deemed necessary by the permittee. Following compliance testing, the average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance; and the average temperature difference across the catalyst bed, for any 3-hour block of time the emissions unit is in operation, shall not be less than 80 percent of the average

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temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance.

7. The permittee shall install, operate, and maintain continuous temperature monitors and recorder(s) which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 5 degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and calculate the average temperature of the process vent stream immediately before the catalyst bed and the average temperature difference across the catalyst bed, each of the eight, 3-hour blocks of time during each day of operation, and shall record and maintain the following information each day:
 - a. all 3-hour blocks of time, when the emissions unit was in operation, during which the average temperature of the process vent stream immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - b. all 3-hour blocks of time, when the emissions unit was in operation, during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance; and
 - c. a log of the downtime for the capture (collection) system, catalytic incinerator, and monitoring equipment when the associated emissions unit was in operation.

These records shall be maintained at the facility for a period of three years.

8. The permittee shall develop and maintain an inspection, maintenance, and monitoring plan for the catalytic oxidizer. The plan shall include a sampling and replacement schedule for the catalyst. The permittee shall sample, test, and maintain records of the testing results of the viability and condition of the catalyst. Samples of the catalyst shall be collected either as a representative sample, taken from different layers of the bed/monolith; or may be taken as a single sample from the leading edge of the bed, where it is first exposed to the process gas. The permittee shall initially use the operational history of similar systems and/or vendor recommendations to determine the

frequency of sampling and testing for the performance and condition of the catalyst. The frequency of sampling may be adjusted or reduced as compliant test data and the incinerator's site-specific catalyst replacement schedule is developed. The frequency of sampling shall be increased with any testing results showing a VOC destruction efficiency equal to or less than that required to maintain the control efficiency requirements contained in this permit. The permittee shall maintain records of the following information for the catalyst:

- a. the date the catalyst sample is taken;
- b. the sampling method; and if a representative sample, the number of samples and from which sample cores, layers, or levels taken;
- c. the testing methods conducted for the VOC destruction efficiency and the level of contamination/poisoning (Si, P, Cl, etc.);
- d. test results for the VOC destruction efficiency, level of contamination or poisoning, and surface area loss (all in %); and
- e. the date(s) of catalyst replacement; and if only partial, the amount or percent of the total catalyst replaced.

These records shall be maintained at the facility for a period of three years.

9. Whenever the monitored value for the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed deviates from the ranges established by the most recent compliance testing, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation and the findings and recommendations.
10. In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable ranges established by the most recent compliance testing, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed,

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the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the difference across the catalyst bed, for any 3-hour block of time, immediately after the corrective action and the names of the personnel who performed the work. Investigation and records required by this paragraph do not eliminate the need to comply with the requirement of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

11. The acceptable ranges for the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed shall be based upon the manufacturer's specifications until the required emission testing is conducted.
12. The permittee maintain monthly records of the following information for the entire facility (includes emissions units P003, P004, P005, P006, P007 and P008):
 - a. the name and identification number of each HAP containing material employed;
 - b. the individual HAP content for each HAP , in pounds of individual HAP per gallon;
 - c. the total combined HAP content, in pounds of combined HAPs per gallon [sum of all the individual HAP contents from b];
 - d. the number of pounds of each HAP containing material employed;
 - e. the total individual HAP usage for each HAP from all HAP containing material, in pounds or tons per month [for each HAP, the sum of (b x d) for each material];
 - f. the total combined HAP usage from all HAP containing materials, in pounds or tons per month [the sum of (c x d) for each material]; and
 - g. the updated rolling, 12-month summation of emissions for each individual HAP, in pounds or tons, and for all combined HAPs, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months. For the first twelve months following the issuance of the permit, this shall be a cumulative total for all months since the issuance of the PTI.

*A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting the CDAQ. This information does not have to be kept on an individual basis.

13. The permit to install for this emissions unit was evaluated based on the actual 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 to this emissions unit for each toxic pollutant, using data from the permit to install application, and modeling was performed for the toxic pollutant(s) emitted at over a ton per year using the SCREEN 3.0 model or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the use of the SCREEN 3.0 (or other approved) model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as required in Engineering Guide #70. The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Styrene

TLV (mg/m³): 85.20

Maximum Hourly Emission Rate (lbs/hr): 0.68

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 32.21

MAGLC (ug/m³): 2028

14. 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 or the use of new materials, that would result in the emission of a compound or chemical with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled, as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIH's) handbook entitled "TLVs and BEIs" ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices");
 - 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/

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decreased exhaust flow, changes in stack height, changes in stack diameter, etc.)

15. 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 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) meet(s) the definition of a "modification" under other provisions of the rule, 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 the 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.

D. Reporting Requirements

1. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
 - a. each period of time when the pressure drop across the baghouse was outside of the range specified by the manufacturer;
 - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
 - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and

- d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or corrective action.

These quarterly reports shall be submitted (i.e. postmarked) by January 31, April 30, July 31 and October 31 of each year; and each report shall cover the previous calendar quarter.

2. The permittee shall submit deviation (excursion) reports for the entire facility (includes emissions units P003, P004, P005, P006, P007 and P008) which include an identification of each month during which the rolling, 12-month individual HAP emissions exceed 9.9 tpy (and combined HAPs emissions exceed 24.5 tpy) based on a rolling, 12-month summation and the actual rolling, 12-month individual (and combined) HAP emissions for each such month.

These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.

3. The permittee shall submit quarterly summaries that identify all 3-hour blocks of time, when the emissions unit was in operation, during which:
 - a. the average temperature of the process vent stream immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - b. the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - c. any records of downtime for the capture (collection) system, the catalytic incinerator, and/or the monitoring equipment when the emissions unit was in operation;
 - d. an identification of each incident of deviation described in (a), (b) and (c) above where a prompt investigation was not conducted;
 - e. an identification of each incident of deviation described in (a), (b) and (c) above where prompt corrective action, that would bring the field into compliance with the acceptable ranges and operation, was determined to be necessary and was not

taken; and

- f. an identification of each incident of deviation described in (a), (b) and (c) above where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31 and October 31 of each year; and each report shall cover the previous calendar quarter.

4. The permittee shall submit quarterly summaries that identify any test results demonstrating that the VOC destruction efficiency of the catalyst was less than that required to maintain compliance with the total control efficiency requirements of this permit. This report shall include the date the non-compliant test results were received, the date the spent or poisoned catalyst was replaced, as well as, the hours of operation of the emissions unit between the catalyst sampling and its replacement. These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.
5. The permittee shall also submit quarterly summaries that identify all periods of time, during the previous calendar quarter, in which sample(s) of the catalyst were not collected and testing was not conducted at the most current frequency developed, monitored, and required in the catalyst maintenance plan; and/or records were not maintained for the catalyst system as required in this permit. These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.

E. Testing Requirements

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

- a. **Emission Limitation**
 OC emissions shall be less than 10.0 TPY

Applicable Compliance Method

Compliance shall be determined from the testing requirements in section E.2 below.

The permittee demonstrated compliance with the annual allowable OC emission limitation initially by multiplying the maximum hourly controlled OC rate [(250

gal/hr)(10 lbs OC/gal)(1 ton/2000 lbs)(30 lbs/ton)(1 - 0.95) = 1.87 lbs OC/hr] by the maximum annual number of hours of operation (8760 hrs/yr), and then dividing by 2000 lbs/ton.

b. **Emission Limitation**

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

Applicable Compliance Method

Compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03 (B)(1) using the methods and procedures specified in U.S. EPA Reference Method 9.

c. **Emission Limitation**

PE shall not exceed 0.551 lb/hr.

Applicable Compliance Method

Compliance with the emission limitation shall be determined by using the following equation:

$$E = (B)(P)(1 \text{ ton}/2000 \text{ lbs})(EF)(1-CE)$$

where,

E = emissions rate (lbs/hr)

B = batch size (gallons/hr), 250 gal/hr maximum

P = pigment concentration (lbs/gal), 5 lbs PM/gal maximum

EF = emissions factor (lbs/ton), taken from AP 42 vol 1, 5th ed. 6.4.1

CE = control efficiency of dust collector (99 %)

If required by the Ohio EPA or CDAQ, compliance with allowable particulate emissions limit shall be determined in accordance with U.S. EPA Reference Methods 1 through 5 of 40 CFR Part 60, Appendix A.

d. **Emission Limitation**

HAP emissions from emissions units P003, P004, P005, P006, P007 and P008 shall not exceed 9.9 TPY for any single HAP and 24.5 TPY for any combination of HAPs.

Applicable Compliance Method

Compliance shall be determined from the record keeping and reporting sections

C.12 and D.2 above, respectively.

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 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of the emissions unit:
- b. The emission testing shall be conducted to demonstrate compliance with the emissions limitation and overall control efficiency limitation for organic compounds.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s) for organic compounds:

Methods 1 through 4 and 25 or 25A, as applicable, of 40 CFR Part 60, Appendix A, as appropriate.

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

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

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

- f. Personnel from the CDAQ shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the CDAQ within 30 days following the completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate CDAQ.

F. Miscellaneous Requirements

None.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- 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>
P008 - Mixer station, portable process tanks up to 500 gallons, tank cleaning station, container filling station, ventilation system with dust collector and fume incinerator	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)(1)	Particulate emissions (PE) shall not exceed 0.551 lb/hr.
	OAC rule 3745-21-07(G)(2)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-02(A).
	OAC rule 3745-31-05(C) Synthetic Minor to avoid Title V and MACT subpart HHHHH	See A.2.a below. Organic compound (OC) emissions shall be less than 10.0 tons per year (TPY). See A.2.b below.
	ORC 3704.03(T)(4)	See A.2.c below.

2. Additional Terms and Conditions

- The total allowable usage and emissions of Hazardous Air Pollutants (HAPs) as

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identified in Section 112(b) of Title III of the Clean Air Act, from emissions units at this facility (P003, P004, P005, P006, P007 and P008) shall not exceed 9.9 tons per year for any individual HAP or 24.5 tons per year for a combination of HAPs. Compliance with the above limitations shall be based upon a rolling, 12-month summation.

- 2.b** Permit to Install 13-04656 for this air contaminant source takes into account the use of a catalytic incinerator, whenever this air contaminant source is in operation, with a minimum control efficiency of 95%, by weight for OC, as a voluntary restriction as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3).
- 2.c** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the calculated annual emission rate for particulate emissions is less than ten tons per year taking into account the federally enforceable rule limit of 0.551 lbs PE/hr under OAC rule 3745-17-11(B)(1).

B. Operational Restrictions

1. The permittee shall maintain the viability of the catalyst system by testing and replacing the catalyst as required in this permit. The longevity of the catalyst shall be determined through regulated sampling and testing of the material. The frequency of sampling and catalyst replacement shall be increased with failing or borderline test results; or the schedule may be adjusted or extended with the demonstration of continuous compliant test results.

C. Monitoring and/or Record keeping Requirements

1. The permittee shall properly install, operate, and maintain equipment to continuously monitor and record the pressure drop, in inches of water, across the baghouse during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the pressure drop, in inches of water, across the baghouse on a daily basis.
2. Whenever the monitored value for the pressure drop deviates from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and

time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation and the findings and recommendations.

3. In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the pressure drop readings immediately after the corrective action and the names of the personnel who performed the work. Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.
4. The acceptable range for the pressure drop across the baghouse shall be based upon the manufacturer's specifications until such time as any required emission testing is conducted.
5. This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the range based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated in this permit by means of an administrative modification.
6. Until compliance testing has been conducted, as required in this permit, the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall be maintained at the average temperature recommended by the manufacturer of the incinerator for the catalyst used, with any modifications deemed necessary by the permittee. Following compliance testing, the average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance; and the average temperature difference across the catalyst bed, for any 3-hour block of time the

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emissions unit is in operation, shall not be less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance.

7. The permittee shall install, operate, and maintain continuous temperature monitors and recorder(s) which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 5 degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and calculate the average temperature of the process vent stream immediately before the catalyst bed and the average temperature difference across the catalyst bed, each of the eight, 3-hour blocks of time during each day of operation, and shall record and maintain the following information each day:
 - a. all 3-hour blocks of time, when the emissions unit was in operation, during which the average temperature of the process vent stream immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - b. all 3-hour blocks of time, when the emissions unit was in operation, during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance; and
 - c. a log of the downtime for the capture (collection) system, catalytic incinerator, and monitoring equipment when the associated emissions unit was in operation.

These records shall be maintained at the facility for a period of three years.

8. The permittee shall develop and maintain an inspection, maintenance, and monitoring plan for the catalytic oxidizer. The plan shall include a sampling and replacement schedule for the catalyst. The permittee shall sample, test, and maintain records of the testing results of the viability and condition of the catalyst. Samples of the catalyst shall be collected either as a representative sample, taken from different layers of the bed/monolith; or may be taken as a single sample from the leading edge of the bed, where it is first exposed to the process gas. The permittee shall initially use the

operational history of similar systems and/or vendor recommendations to determine the frequency of sampling and testing for the performance and condition of the catalyst. The frequency of sampling may be adjusted or reduced as compliant test data and the incinerator's site-specific catalyst replacement schedule is developed. The frequency of sampling shall be increased with any testing results showing a VOC destruction efficiency equal to or less than that required to maintain the control efficiency requirements contained in this permit. The permittee shall maintain records of the following information for the catalyst:

- a. the date the catalyst sample is taken;
- b. the sampling method; and if a representative sample, the number of samples and from which sample cores, layers, or levels taken;
- c. the testing methods conducted for the VOC destruction efficiency and the level of contamination/poisoning (Si, P, Cl, etc.);
- d. test results for the VOC destruction efficiency, level of contamination or poisoning, and surface area loss (all in %); and
- e. the date(s) of catalyst replacement; and if only partial, the amount or percent of the total catalyst replaced.

These records shall be maintained at the facility for a period of three years.

9. Whenever the monitored value for the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed deviates from the ranges established by the most recent compliance testing, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation and the findings and recommendations.
10. In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable ranges established by the most recent compliance testing, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each

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corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the difference across the catalyst bed, for any 3-hour block of time, immediately after the corrective action and the names of the personnel who performed the work. Investigation and records required by this paragraph do not eliminate the need to comply with the requirement of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

11. The acceptable ranges for the average temperature of the exhaust gases immediately before the catalyst bed and the temperature difference across the catalyst bed shall be based upon the manufacturer's specifications until the required emission testing is conducted.
12. The permittee maintain monthly records of the following information for the entire facility (includes emissions units P003, P004, P005, P006, P007 and P008):
 - a. the name and identification number of each HAP containing material employed;
 - b. the individual HAP content for each HAP , in pounds of individual HAP per gallon;
 - c. the total combined HAP content, in pounds of combined HAPs per gallon [sum of all the individual HAP contents from b];
 - d. the number of pounds of each HAP containing material employed;
 - e. the total individual HAP usage for each HAP from all HAP containing material, in pounds or tons per month [for each HAP, the sum of (b x d) for each material];
 - f. the total combined HAP usage from all HAP containing materials, in pounds or tons per month [the sum of (c x d) for each material]; and
 - g. the updated rolling, 12-month summation of emissions for each individual HAP, in pounds or tons, and for all combined HAPs, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months. For the first twelve months following the issuance of the permit, this shall be a cumulative total for all months since the issuance of the PTI.

*A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting the CDAQ. This information does not have to be kept on an individual basis.

13. The permit to install for this emissions unit was evaluated based on the actual 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 to this emissions unit for each toxic pollutant, using data from the permit to install application, and modeling was performed for the toxic pollutant(s) emitted at over a ton per year using the SCREEN 3.0 model or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the use of the SCREEN 3.0 (or other approved) model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as required in Engineering Guide #70. The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Styrene

TLV (mg/m³): 85.20

Maximum Hourly Emission Rate (lbs/hr): 0.68

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 32.21

MAGLC (ug/m³): 2028

14. 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 or the use of new materials, that would result in the emission of a compound or chemical with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled, as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIH's) handbook entitled "TLVs and BEIs" ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices");
 - 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

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- 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.)
15. 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 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) meet(s) the definition of a "modification" under other provisions of the rule, 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 the 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.

D. Reporting Requirements

1. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
 - a. each period of time when the pressure drop across the baghouse was outside of the range specified by the manufacturer;
 - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
 - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the pressure drop into compliance with the

acceptable range, was determined to be necessary and was not taken; and

- d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or corrective action.

These quarterly reports shall be submitted (i.e. postmarked) by January 31, April 30, July 31 and October 31 of each year; and each report shall cover the previous calendar quarter.

2. The permittee shall submit deviation (excursion) reports for the entire facility (includes emissions units P003, P004, P005, P006, P007 and P008) which include an identification of each month during which the rolling, 12-month individual HAP emissions exceed 9.9 tpy (and combined HAPs emissions exceed 24.5 tpy) based on a rolling, 12-month summation and the actual rolling, 12-month individual (and combined) HAP emissions for each such month.

These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.

3. The permittee shall submit quarterly summaries that identify all 3-hour blocks of time, when the emissions unit was in operation, during which:
 - a. the average temperature of the process vent stream immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - b. the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference maintained during the most recent emissions test that demonstrated the emissions unit to be in compliance;
 - c. any records of downtime for the capture (collection) system, the catalytic incinerator, and/or the monitoring equipment when the emissions unit was in operation;
 - d. an identification of each incident of deviation described in (a), (b) and (c) above where a prompt investigation was not conducted;
 - e. an identification of each incident of deviation described in (a), (b) and (c) above where prompt corrective action, that would bring the field into compliance with the

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acceptable ranges and operation, was determined to be necessary and was not taken; and

- f. an identification of each incident of deviation described in (a), (b) and (c) above where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31 and October 31 of each year; and each report shall cover the previous calendar quarter.

4. The permittee shall submit quarterly summaries that identify any test results demonstrating that the VOC destruction efficiency of the catalyst was less than that required to maintain compliance with the total control efficiency requirements of this permit. This report shall include the date the non-compliant test results were received, the date the spent or poisoned catalyst was replaced, as well as, the hours of operation of the emissions unit between the catalyst sampling and its replacement. These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.
5. The permittee shall also submit quarterly summaries that identify all periods of time, during the previous calendar quarter, in which sample(s) of the catalyst were not collected and testing was not conducted at the most current frequency developed, monitored, and required in the catalyst maintenance plan; and/or records were not maintained for the catalyst system as required in this permit. These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.

E. Testing Requirements

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

- a. **Emission Limitation**
 OC emissions shall be less than 10.0 TPY

Applicable Compliance Method

Compliance shall be determined from the testing requirements in section E.2 below.

The permittee demonstrated compliance with the annual allowable OC emission

limitation initially by multiplying the maximum hourly controlled OC rate [(250 gal/hr)(10 lbs OC/gal)(1 ton/2000 lbs)(30 lbs/ton)(1 - 0.95) = 1.87 lbs OC/hr] by the maximum annual number of hours of operation (8760 hrs/yr), and then dividing by 2000 lbs/ton.

b. **Emission Limitation**

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

Applicable Compliance Method

Compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03 (B)(1) using the methods and procedures specified in U.S. EPA Reference Method 9.

c. **Emission Limitation**

PE shall not exceed 0.551 lb/hr.

Applicable Compliance Method

Compliance with the emission limitation shall be determined by using the following equation:

$$E = (B)(P)(1 \text{ ton}/2000 \text{ lbs})(EF)(1-CE)$$

where,

E = emissions rate (lbs/hr)

B = batch size (gallons/hr), 250 gal/hr maximum

P = pigment concentration (lbs/gal), 5 lbs PM/gal maximum

EF = emissions factor (lbs/ton), taken from AP 42 vol 1, 5th ed. 6.4.1

CE = control efficiency of dust collector (99 %)

If required by the Ohio EPA or CDAQ, compliance with allowable particulate emissions limit shall be determined in accordance with U.S. EPA Reference Methods 1 through 5 of 40 CFR Part 60, Appendix A.

d. **Emission Limitation**

HAP emissions from emissions units P003, P004, P005, P006, P007 and P008 shall not exceed 9.9 TPY for any single HAP and 24.5 TPY for any combination of HAPs.

Applicable Compliance Method

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Compliance shall be determined from the record keeping and reporting sections C.12 and D.2 above, respectively.

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 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of the emissions unit:
 - b. The emission testing shall be conducted to demonstrate compliance with the emissions limitation and overall control efficiency limitation for organic compounds.
 - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s) for organic compounds:

Methods 1 through 4 and 25 or 25A, as applicable, of 40 CFR Part 60, Appendix A, as appropriate.

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

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

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

- f. Personnel from the CDAQ shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the CDAQ within 30 days following the completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate CDAQ.

F. Miscellaneous Requirements

None.