



10/17/2014

Robert Naftanail
Masco Cabinetry Middlefield LLC (KraftMaid Plant 3)
15535 South State Ave.
P.O. Box 1055
Middlefield, OH 44062

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 0204000360
Permit Number: P0117753
Permit Type: Administrative Modification
County: Ashtabula

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

How to appeal this permit

The issuance of this PTIO is a final action of the Director 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, made payable to "Ohio Treasurer Josh Mandel," 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
77 South High Street, 17th Floor
Columbus, OH 43215

Certified Mail

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

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging 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 Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/survey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Ohio EPA DAPC, Northeast District Office at (330)425-9171 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Erica R. Engel-Ishida, Interim Manager
Permit Issuance and Data Management Section, DAPC

Cc: Ohio EPA-NEDO



FINAL

**Division of Air Pollution Control
Permit-to-Install and Operate
for**

Masco Cabinetry Middlefield LLC (KraftMaid Plant 3)

| | |
|----------------|-----------------------------|
| Facility ID: | 0204000360 |
| Permit Number: | P0117753 |
| Permit Type: | Administrative Modification |
| Issued: | 10/17/2014 |
| Effective: | 10/17/2014 |
| Expiration: | 1/29/2019 |



Division of Air Pollution Control
Permit-to-Install and Operate
for
Masco Cabinetry Middlefield LLC (KraftMaid Plant 3)

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Authorization

Facility ID: 0204000360
Application Number(s): M0003024
Permit Number: P0117753
Permit Description: Administrative modification permit for emissions unit K013 to switch control device. No change on emission limitations, and record keeping, reporting, and testing requirements.
Permit Type: Administrative Modification
Permit Fee: \$100.00
Issue Date: 10/17/2014
Effective Date: 10/17/2014
Expiration Date: 1/29/2019
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

Masco Cabinetry Middlefield LLC (KraftMaid Plant 3)
150 GRAND VALLEY AVE.
ORWELL, OH 44076

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

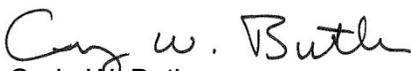
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087
(330)425-9171

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency


Craig W. Butler
Director



Final Permit-to-Install and Operate
Masco Cabinetry Middlefield LLC (KraftMaid Plant 3)
Permit Number: P0117753
Facility ID: 0204000360
Effective Date: 10/17/2014

Authorization (continued)

Permit Number: P0117753

Permit Description: Administrative modification permit for emissions unit K013 to switch control device. No change on emission limitations, and record keeping, reporting, and testing requirements.

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

| | |
|-----------------------------------|--|
| Emissions Unit ID: | K013 |
| Company Equipment ID: | Overhead Conveyor Line #3 - Spray Booth #7 |
| Superseded Permit Number: | P0114970 |
| General Permit Category and Type: | Not Applicable |



Final Permit-to-Install and Operate
Masco Cabinetry Middlefield LLC (KraftMaid Plant 3)
Permit Number: P0117753
Facility ID: 0204000360
Effective Date: 10/17/2014

A. Standard Terms and Conditions



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

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

2. Who is responsible for complying with this permit?

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

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

3. What records must I keep under this permit?

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

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

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

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

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

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

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

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is



very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

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

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

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

7. What reports must I submit under this permit?

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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



Final Permit-to-Install and Operate
Masco Cabinetry Middlefield LLC (KraftMaid Plant 3)
Permit Number: P0117753
Facility ID: 0204000360
Effective Date: 10/17/2014

B. Facility-Wide Terms and Conditions



1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (1) None.
 - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (1) None.
2. Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.



Final Permit-to-Install and Operate
Masco Cabinetry Middlefield LLC (KraftMaid Plant 3)
Permit Number: P0117753
Facility ID: 0204000360
Effective Date: 10/17/2014

C. Emissions Unit Terms and Conditions



1. K013, Overhead Conveyor Line #3 - Spray Booth #7

Operations, Property and/or Equipment Description:

Spray booth 7 of overhead conveyor line 3, included in PTE#3 and controlled by RTO #5

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

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

a. b)(1)e, d)(6), d)(7), d)(8), d)(9) and e)(3)

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

a. b)(1)d, b)(2)a, b)(2)b, b)(2)c, b)(2)d, b)(2)e, c)(3), c)(4), c)(5), d)(10), d)(15), d)(16), e)(1), f)(1)a, f)(1)b, f)(1)c, f)(1)f, f)(1)g and f)(2)

b) Applicable Emissions Limitations and/or Control Requirements

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

| | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|----|-------------------------------|---|
| a. | OAC rule 3745-17-11(C) | See c)(1), c)(2), d)(1), d)(2), d)(3), d)(4) and d)(5). |
| b. | OAC rule 3745-21-15 | See b)(2)g, b)(2)h, d)(11), d)(12), d)(13), d)(14), and e)(2). |
| c. | OAC rule 3745-31-05(A)(3) | Emissions from the combustion of natural gas in regenerative thermal oxidizer (RTO) #5 shall not exceed 3.20 pounds per hour and 14.02 tons per year of nitrogen oxides (NO _x) and 2.69 pounds per hour and 11.77 tons per year of carbon monoxide (CO). See b)(2)f. |
| d. | OAC rule 3745-31-05(D) | See b)(2)a, b)(2)b, b)(2)c, b)(2)d, b)(2)e, c)(3), c)(4) and c)(5). |
| e. | ORC 3704.03(F)(4)(c) | See d)(6), d)(7), d)(8), d)(9) and e)(3). |



| | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|----|---|---|
| f. | 40 CFR Part 63, Subpart JJ - National Emissions Standards for Wood Furniture Manufacturing Operations | See b)(2)i. |

(2) Additional Terms and Conditions

- a. The permittee shall use an emissions control system, which consists of a permanent total enclosure (PTE #3) and RTO #5 (at 75,000 cfm), to capture and control emissions from emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041.
- b. The permittee shall design and maintain PTE #3 to house emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041 in such a manner as to function as a permanent total enclosure, as defined by 40 CFR, Part 51, Appendix M, Reference Method 204, which shall provide for 100% capture efficiency for the emissions from these emissions units and emissions units contained within the PTE, including rag wipe operations, miscellaneous aerosol can suage and the collection of waste and/or recovered VOC-containing materials.
- c. The permittee shall install and maintain RTO #5 to control the emissions, including from all coating operations, mixing of VOC-containing materials and cleanup operations that are captured by PTE #3. RTO #5 shall be used and achieve a VOC destruction efficiency of at least 99%, by weight. All associated emissions units shall be shut down if RTO #5 becomes inoperable.
- d. The emissions from RTO #5 shall be restricted in such a manner as to limit emissions from emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041, combined, to the following:
 - i. 151.8 pounds per day and 27.70 tons per rolling, 12-month period of VOC;
 - ii. 528 pounds per month and 3.17 tons per rolling, 12-month period of each individual HAP; and
 - iii. 1,378 pounds per month and 8.27 tons per rolling, 12-month period of total combined HAPs.
- e. The facility-wide emissions shall not exceed the following:
 - i. 83.1 tons per rolling, 12-month period of VOC;
 - ii. 9.50 tons per rolling, 12-month period of each individual HAP; and
 - iii. 24.80 tons per rolling, 12-month period of total combined HAPs.



- f. The emission limitations specified in b)(1)c are based upon the emissions units' potential to emit. Therefore, no monitoring, record keeping and reporting requirements are necessary to ensure ongoing compliance with these emission limitations.
 - g. The requirements established pursuant to OAC rule 3745-21-15(D)(3) are less stringent than the requirements established pursuant to OAC rule 3745-31-05 (D).
 - h. In accordance with OAC rule 3745-21-15(F), the permittee shall prepare and maintain a written work practice implementation plan. The plan shall define environmentally desirable work practices for each wood furniture manufacturing operation and address each of the work practices contained in paragraphs (b) to (d) and (f) to (k) of 40 CFR 63.803.
 - i. This facility is not an affected source subject to the requirements of 40 CFR Part 63, Subpart JJ because it is not a major source, as defined in 40 CFR 63.2, for individual or total combined HAPs. The permittee shall not exceed the HAP emission limitations contained in this permit, without first obtaining a permit modification.
- c) Operational Restrictions
- (1) For emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K040 and K041, the permittee shall operate the dry filtration system for the control of particulate emissions as the followings:
 - a. Whenever the emissions unit is in operation, the dry particulate filter shall be maintained in accordance with the manufacturer's recommendations, instructions and/or operating manual(s), with any modifications deemed necessary by the permittee; and
 - b. In the event the particulate filter system is not operating in accordance with the manufacturer's recommendations, instructions, or operating manual, with any modifications deemed necessary by the permittee, the control device shall be expeditiously repaired or otherwise returned to these documented operating conditions.
 - (2) For emissions unit K039, the permittee shall operate the water wash system for the control of particulate emissions as the follows:
 - a. Whenever the emissions unit is in operation, the water wash shall be maintained in accordance with the manufacturer's recommendations, instructions and/or operating manual(s), with any modifications deemed necessary by the permittee; and



- b. In the event the water wash control system is not operating in accordance with the manufacturer's recommendations, instructions, or operating manual, with any modifications deemed necessary by the permittee, the control device shall be expeditiously repaired or otherwise returned to these documented operating conditions.
- (3) The permittee shall limit the total coatings, solvents and support materials usage for emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041, combined, as follows:
- a. 43,196 gallons per month of coatings, including stains, toners, glazes, topcoats and sealers; and
- b. 15,300 gallons per month of solvents and support materials, including cleanup materials and booth buffers.
- (4) The PTE #3 shall be maintained under negative pressure whenever any of emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041 are in operation and shall be designed and maintained to have an average facial velocity of air through each natural draft opening of at least 200 feet per minute (3,600 m/hr). Compliance with the average facial velocity shall be demonstrated during the compliance test, by either using an air flow monitor or a differential pressure gauge at each natural draft opening and maintaining the required facial velocity or the corresponding negative pressure. The PTE #3 shall meet all of the following criteria if the capture efficiency of the enclosure and control device is to be assumed to be 100%:
- a. Any natural draft opening shall be at least four equivalent opening diameters, or 4 times the diameter of the opening, from each VOC emitting point. An equivalent diameter is the diameter of a circle that has the same area as the opening. If the opening is not circular the equivalent diameter (ED) is calculated as follows:
- $$ED = (4 \text{ area}/\pi)^{0.5}$$
- b. The total area of all natural draft openings (A_N) shall not exceed 5 percent of the total surface area of the enclosure (A_T), i.e, the four walls, floor and ceiling. The natural draft opening to enclosure area ratio (NEAR) is calculated as follows:
- $$NEAR = A_N / A_T$$
- c. The direction of air flow through all natural draft openings shall be into the enclosure, with an average facial velocity of no less than 200 feet per minute (3,600 m/hr) or a pressure drop of -0.013 mm Hg (-0.007 in. H₂O), as a 3-hour block average value.
- d. All access doors and windows to the enclosure that do not meet the requirements of a natural draft opening and whose surface areas are not included in the 5 percent surface area determination in "b", shall be completely closed to any air movement during process operations.



- e. All VOC emissions shall be captured and contained for discharge through the control device.
- (5) In order to maintain compliance with the applicable emission limitations contained in section b) above, acceptable combustion temperature, at a 3-hour block average value, within RTO #5, during any period of time when emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041 are in operation, shall not be more than 50 degrees Fahrenheit below the average temperature measured during the most recent performance test that demonstrated the emissions units were in compliance, except during period of startup, shutdown and malfunction.
- d) **Monitoring and/or Recordkeeping Requirements**
- (1) The permittee shall maintain documentation of the manufacturer's recommendations, instructions, or operating manuals for the dry particulate filter for each of emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K040 and K041 and water wash system for emissions unit K039, along with documentation of any modifications deemed necessary by the permittee. These documents shall be maintained at the facility and shall be made available to the appropriate Ohio EPA District Office or local air agency upon request.
 - (2) The permittee shall conduct periodic inspections of the dry particulate filter for each of emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K040 and K041 and water wash system for emissions unit K039, to determine whether it is operating in accordance with the manufacturer's recommendations, instructions, or operating manuals with any modifications deemed necessary by the permittee or operator. These inspections shall be performed at a frequency that shall be based upon the recommendation of the manufacturer and the permittee shall maintain a copy of the manufacturer's recommended inspection frequency and it shall be made available to the Ohio EPA upon request.
 - (3) In addition to the recommended periodic inspections, not less than once each calendar year the permittee shall conduct a comprehensive inspection of the dry particulate filter for each of emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K040 and K041 and water wash system for emissions unit K039, while the emissions unit is shut down and perform any needed maintenance and repair to ensure that it is operated in accordance with the manufacturer's recommendations.
 - (4) The permittee shall document each inspection (periodic and annual) of the dry particulate filter system for each of emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K040 and K041 and water wash system for emissions unit K039 and shall maintain the following information:
 - a. the date of the inspection;
 - b. a description of each/any problem identified and the date it was corrected;
 - c. a description of any maintenance and repairs performed; and
 - d. the name of person who performed the inspection.



These records shall be maintained at the facility for not less than five years from the date the inspection and any necessary maintenance or repairs were completed and shall be made available to the appropriate Ohio EPA District Office or local air agency upon request.

- (5) The permittee shall maintain records that document any time periods when the dry particulate filter for each of emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K040 and K041 and water wash system for emissions unit K039, was not in service when the emissions unit(s) was/were in operation, as well as, a record of all operations during which the dry particulate filter was not operated according to the manufacturer's recommendations with any documented modifications made by the permittee. These records shall be maintained for a period of not less than five years and shall be made available to the Ohio EPA upon request.
- (6) The federally enforceable permit-to-install-and-operate (FEPTIO) application for these emissions units was evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to these emissions units for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration results from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
 - a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound emitted from the emissions units, (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
 - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices";
or
 - ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
 - b. The TLV was divided by ten to adjust the standard from the working population to the general public (TLV/10).



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

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

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

| | | MAGLC (ug/m ³) | Emission Rate (grams/sec) | Predicted 1-hr max ground level conc. (ug/m ³) | MAGLC exceeded? (Y/N) |
|--------------|-----------|-------------------------------|---------------------------------|--|-----------------------------|
| Formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| Methanol | 262,086 | 6,240 | 0.23 | 26.43 | N |
| Acetone | 1,187,116 | 28,264 | 0.01 | 1.15 | N |
| MEK | 589,775 | 14,042 | 0.32 | 35.88 | N |
| Naphthalene | 52,429 | 1,248 | 0.0001 | 0.008 | N |
| Cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| Ethylbenzene | 4,343,192 | 10,338 | 0.22 | 25.35 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 20.91 | N |
| Toluene | 188,405 | 4,486 | 0.57 | 65.11 | N |
| Hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| Xylene | 434,192 | 10,338 | 1.03 | 116.63 | N |

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

- (7) Prior to making any physical changes to or changes in the method of operation of the emissions units that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:
- a. changes in the composition of the materials used or the use of new materials that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;



- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, from that which was modeled from the initial (or last) application; and
- c. physical changes to the emissions units or their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

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

- (8) The permittee shall collect, record and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):
 - a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
 - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);
 - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
 - d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F) and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.
- (9) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.



- (10) The permittee shall measure, document/calculate and maintain a permanent record of the following information for the permanent total enclosure, which may be the same record documented during the compliance test(s):
- a. the measured diameter of each natural draft opening;
 - b. the distance measured from each natural draft opening to each VOC emitting point;
 - c. the total calculated surface area of all natural draft openings and the surface area of the enclosure's four walls, floor and ceiling;
 - d. the calculation or demonstration that the distance from each VOC emitting point to each natural draft opening is at least 4 times the diameter of the opening; and
 - e. the calculation demonstrating that the sum of the surface areas of all of the natural draft openings to the enclosure is not more than 5 percent of the sum of the surface areas of the enclosure's four walls, floor and ceiling.

- (11) In accordance with OAC rule 3745-21-15(H)(5), the permittee shall install, calibrate, maintain and operate, according to manufacturer's specifications, either one of the following:
- a. A pressure monitoring device equipped with a continuous recorder to measure the pressure drop across PTE #3, as a 3-hour block average value, with an accuracy of at least 0.5 inch of water column or five per cent of the measured value, whichever is larger, or
 - b. A monitoring device equipped with a continuous recorder to measure the facial velocity of air through any natural draft opening into the PTE #3.

The permittee shall also keep a log or record of downtime for the capture (collection) system when the emissions unit was in operation.

- (12) In accordance with OAC rule 3745-21-15(H)(1)(a), the permittee shall properly install, calibrate, maintain and operate, according to manufacturer's specifications, a temperature monitoring device equipped with a continuous recorder that measures and records the combustion temperature within RTO #5 when the emissions units K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041 are in operation, including periods of startup and shutdown. 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 monitoring device shall be located in the firebox or in the duct immediately downstream of the firebox in a position before any substantial heat exchange. The permittee shall collect and record the following information each day when the emissions unit(s) is/are in operation:
- a. all 3-hour blocks of time, when any of the associated emissions units controlled by RTO #5 was/were in operation, during which the average combustion



temperature within RTO #5 was more than 50 degrees Fahrenheit below the average temperature measured during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance; and

- b. a log or record of the downtime for the capture (collection) system, thermal oxidizer and monitoring equipment, when the associated emissions unit(s) were in operation.
- (13) In accordance with OAC rule 3745-21-15(H)(12), the permittee shall inspect the VOC emission control system and monitoring equipment to assure that the VOC emission control system is operating properly and that no leaks or malfunctions have occurred or are occurring. The inspections shall be made at the frequency defined by the equipment manufacturer, or as otherwise appropriate for each VOC emission control system and monitoring equipment, but no less than monthly.
- (14) All records required under OAC rule 3745-21-15(K) shall be retained for a period of not less than five years and shall be made available to the Director or any authorized representative of the director for review during normal business hours. The following types of records shall be maintained by the permittee.
- a. Work practice implementation plan records:
 - i. records demonstrating that the operator training program required by 40 CFR 63.803(b) is in place;
 - ii. records collected in accordance with the inspection and maintenance plan required by 40 CFR 63.803(c);
 - iii. records associated with the cleaning solvent accounting system required by 40 CFR 63.803(d);
 - iv. records associated with the limitation on the use of conventional air spray guns showing total finishing material usage and the percentage of finishing materials applied with conventional air spray guns for each semi-annual period as required by 40 CFR 63.803(h); and
 - v. copies of documentation such as logs developed to demonstrate that the other provisions of the work practice implementation plan are followed.
 - b. Monitoring records for VOC emission control systems.
 - i. continuous records of the firebox temperature;
 - ii. records of all 3-hour block averages of the firebox temperature during operation of the emissions units K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041;
 - iii. a record of the firebox temperature operating limit established under section c)(5); and



- iv. records of the times and durations of all periods during process or control operation when the monitoring device is not working.
 - c. For monthly (or more frequent) inspections of the VOC emission control system and monitoring equipment conducted pursuant to d)(13) above, a record of the results of each inspection.
- (15) The permittee shall collect and record the following information each month for emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041, combined, which are contained in PTE #3 and controlled by RTO #5:
- a. the name and identification number of each coating (stain, toner, glazes, topcoats and sealers), solvent and support material (cleanup materials and booth buffer);
 - b. the VOC content of each coating, solvent and support material identified in "a" in pounds per gallon;
 - c. the individual HAP (from Section 112(b), list of hazardous air pollutants, 1990 Clean Air Act, Title III) content of each coating, solvent and support material identified in "a", in pounds per gallon;
 - d. the number of gallons of each coating, solvent and support material employed, as identified in "a";
 - e. the total uncontrolled VOC emissions rate from all coatings, solvent and support materials employed, i.e., $(\sum b \times d)$ for all materials, in pounds;
 - f. the total uncontrolled emission rates of each individual HAP from all coatings, solvents and support materials employed, i.e., $(\sum c \times d)$ for all materials, in pounds;
 - g. the total uncontrolled emission rate of combined total HAPs from all coatings, solvents and support materials employed, i.e., the sum of "f" for all HAPs from all materials, in pounds;
 - h. the controlled emission rate shall be calculated using the overall control efficiency for the VOC control system (PTE #3 and RTO #5) as determined during the most recent emission test that demonstrated that these emissions units were in compliance;
 - i. the calculated, controlled VOC emissions for all coatings, solvents and support materials employed, in pounds per month;
 - j. If a solvent recovery credit is to be applied, the number of gallons or weight density of the VOC-containing materials collected (at the end of each day) for recovery, recycle and/or disposal at an outside facility; and the lowest VOC content, in pounds per gallon or percent by weight, of the all materials making up the volume of the recovered materials, or the VOC content of the material making up at least 90% of the recovered material. The credit shall be applied during the



month the material is shipped, using the weight or volume, of record, shipped, less the weight of the drum or container.

- k. If a solvent recovery credit is to be applied, the net VOC emissions for the month, i.e., $(i - j)$, in pounds per month;
 - l. the operating days for the month;
 - m. the calculated, average controlled daily VOC emissions for all coatings, solvents and support materials employed, i.e., (k/l) , in pounds per day;
 - n. the calculated, controlled emission rate of each individual HAP for all coatings, solvents and support materials employed, in tons per month;
 - o. the calculated, controlled emission rate of combined total HAPs for all coatings, solvents and support materials, in tons per month;
 - p. the total number of gallons of coatings (including stains, toners, glazes, topcoats and sealers) employed, in gallons per month;
 - q. the total number of gallons of solvents and support materials (including cleanup materials and booth buffer) employed, in gallons per month;
 - r. the rolling, 12-month period controlled VOC emissions from all the coatings, solvents and support materials employed, in tons;
 - s. the rolling, 12-month period controlled each individual HAP emissions from all coatings, solvent and support materials employed, in tons; and
 - t. the rolling, 12-month period controlled combined total HAP emissions from all coatings, solvents and support materials employed, in tons.
- (16) The permittee shall collect and record the following facility-wide information each month:
- a. the rolling, 12-month period controlled VOC emissions, in tons;
 - b. the rolling, 12-month period controlled each individual HAP, in tons; and
 - c. the rolling, 12-month period controlled total combined HAPs emissions, in tons.
- (17) The permittee shall keep an operating downtime log when RTO #5 becomes inoperable during otherwise normal operation while the associated emissions unit(s) were in operation.

e) Reporting Requirements

- (1) The permittee shall submit written quarterly deviation reports that identify:
- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the



potential to emit of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

- i. For RTO #5:
 - (a) all 3-hour blocks of time during which the average combustion temperatures within RTO #5 did not comply with the temperature limitation specified in this permit; and
 - (b) all periods of downtime for the capture (collection) system, RTO #5 and/or monitoring equipment when any emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041 are in operation, including cleanup and mixing operations.
 - ii. any month during which the coating and/or the solvent/support material usage for emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041 exceeded the monthly usage limits of 43,196 gallons and 15,300 gallons, respectively;
 - iii. any month during which the calculated controlled emissions from RTO #5 exceeded the following:
 - (a) 151.8 pounds per day and 27.70 tons per rolling, 12-month period of VOC emissions;
 - (b) 528.0 pounds per month and 3.17 tons per rolling, 12-month period of each individual HAP; and
 - (c) 1,378 pounds per month and 8.27 tons per rolling, 12-month period of total combined HAPs.
 - iv. any month during which the rolling, 12-month period facility-wide emissions exceeded the following:
 - (a) 83.10 tons of VOC;
 - (b) 9.50 tons of each individual HAP; and
 - (c) 24.80 tons of total combined HAPs.
 - v. any 3-hour blocks of time, when any of emissions units K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041 was in operation, during which the PTE #3 was not maintained at the conditions under section c)(5) above.
- b. the probable cause of each deviation (excursion);
 - c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and



- d. the magnitude and duration of each deviation (excursion).

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

The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June) and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

- (2) In accordance with OAC rule 3745-21-15(L), the permittee shall submit semiannual compliance status reports no later than January 31 (covering period of July to December of previous year) and July 31 (covering period of January to June of the same year) to the Ohio EPA. For each semiannual compliance status report, the permittee shall submit the following information for the 6-month period covered by the report.
 - a. The permittee shall state in the semi-annual compliance status report any changes to the previous reporting of which paragraphs of (D)(1) to (D)(5) of OAC rule 3745-21-15 is elected to be met.
 - b. Any changes to monitoring devices previously reported and required under sections c)(7), d)(11), d)(12), d)(13) and d)(14) above.
 - c. If any subsequent compliance tests of the VOC emission control system are conducted during the semiannual reporting period, the semiannual compliance status report shall include the results of each compliance test, a complete test report and the compliance test monitoring data as described under paragraphs (L)(2)(d)(ii) to (L)(2)(d)(iv) of OAC rule 3745-21-15.
 - d. The permittee shall submit with the semiannual compliance status report the following compliance certifications:
 - i. The compliance certification shall state that the 3-hour block averages of monitoring parameters recorded pursuant to sections d)(11) and d)(12)a above had complied with the operating limits (operating parameter values for the monitoring parameters established under section f)(2) below during of all periods of the operation of these emissions units; or should otherwise identify the times and durations of all periods of noncompliance and the reasons for noncompliance.
 - ii. The compliance certification shall identify the times and durations of all periods during process or control operation when the monitoring device is not working, as recorded pursuant to sections d)(11)b and d)(11)c above.
 - iii. The compliance certification shall state that the overall reduction of VOC emissions, based on the most recent compliance test conducted in accordance with section f)(2) below, has met the overall reduction of VOC emissions required under sections b)(2)a and b)(2)b above during the



semiannual reporting period, or should otherwise identify the periods of noncompliance and the reasons for noncompliance.

- iv. The compliance certification shall state that the work practice implementation plan is being followed or should otherwise identify the provisions of the plan that have not been implemented and each day the provisions were not implemented.
 - v. The compliance certification shall identify and describe any corrective actions considered and implemented for any noncompliance being reported in the compliance certification.
 - vi. The compliance certification shall be signed by a responsible official of the company that owns or operates the wood furniture manufacturing operations.
- (3) The permittee shall submit annual reports to Ohio EPA documenting any change made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. These reports shall be submitted to the Director (the Ohio EPA, Northeast District Office) each year in the PER and shall cover the previous year.
- (4) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA e-Business Center: Air Services by the due date identified in the Authorization section of this permit. The PER shall cover a reporting period of no more than 12 months for each air contaminant source identified in this permit.
- f) Testing Requirements
- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
- a. Emission Limitation:
The use of PTE #3 confirms to U.S. EPA Method 204 for 100% capture.
Applicable Compliance Method:
Compliance shall be demonstrated through the monitoring and record keeping requirements specified in sections d)(10) and d)(11) above.
 - b. Emission Limitation:
VOC destruction efficiency for RTO #5 shall be at least 99%, by weight



Applicable Compliance Method:

Compliance shall be demonstrated through the monitoring and record keeping requirements specified in sections d)(12), d)(13), d)(14)b and d)(14)c above and the emissions testing requirements specified in f)(2).

c. Emission Limitations:

Emissions from RTO #5 shall be restricted in such a manner as to limit emissions from emissions units K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041, combined, to the following:

- i. 151.8 pounds per day and 27.70 tons per rolling, 12-month period of VOC;
- ii. 528 pounds per month and 3.17 tons per rolling, 12-month period of each individual HAP; and
- iii. 1,378 pounds per month and 8.27 tons per rolling, 12-month period of total combined HAPs.

Applicable Compliance Method:

Compliance shall be demonstrated through the monitoring and record keeping requirements specified in d)(15).

d. Emission Limitation:

The permittee shall prepare and maintain a written work practice implementation plan.

Applicable Compliance Method:

Compliance shall be demonstrated through the monitoring and record keeping requirements specified in d)(14)a.

e. Emission Limitation:

Nitrogen oxides (NO_x) emissions from the combustion of natural gas in regenerative thermal oxidizers (RTO) #5 shall not exceed 3.20 pounds per hour and 14.02 tons per year.

Carbon monoxide (CO) emissions from the combustion of natural gas in RTO #5 shall not exceed 2.69 pounds per hour and 11.77 tons per year.

Applicable Compliance Method:

The hourly emission limitation shall be determined based upon the following:

$$E = (EF)(R)/(H)$$



where:

E = emission rate, in lbs/hr;

EF = emission factor, AP-42 "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4-6, Table 1.4-2 (9/98), for NO_x emissions, 100 lbs/mmcf and for CO emissions, 84 lbs/mmcf;

R = maximum rating (heat input) of RTO #5, reported to be 32.0 mmBtu/hr; and

H = heating value of the natural gas, in Btu/cf. 1,000 Btu/cf was used in the emission calculation for this permit.

The tons per year emission limitations were developed by multiplying the short-term allowable emission limitation (3.20 lbs/hr of NO_x and 2.69 lbs/hr of CO) by the maximum annual hours of operation (8,760 hours) and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance shall also be shown with the annual emission limitation.

f. Emission Limitation:

The permittee shall limit the total coating and solvent/support materials usage from the emissions units K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041, as follows:

- i. 43,196 gallons per month of coatings, including stains, toners, glazes, topcoats and sealers; and
- ii. 15,300 gallons per month of solvents and support materials, including cleanup materials and booth buffers.

Applicable Compliance Method:

Compliance shall be demonstrated through the record keeping requirements specified in d)(15)p and d)(15)q, respectively.

g. Emission Limitations:

The facility-wide emissions shall not exceed the following:

- i. 83.1 tons per rolling, 12-month period of VOC;
- ii. 9.50 tons per rolling, 12-month period of each individual HAP; and
- iii. 24.80 tons per rolling, 12-month period of total combined HAPs.

Applicable Compliance Method:

Compliance shall be demonstrated through the monitoring and record keeping requirements specified in d)(16).



- (2) The permittee shall conduct, or have conducted, emission testing for PTE #3 and RTO #5 which collected and controlled emissions from emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041 in accordance with the following requirements:
- a. The emissions units K013, K017, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040 and K041 are controlled by a VOC control system consisting with PTE #3 and RTO #5. PTE #3 and RTO #5 were tested and demonstrated compliance on June 17, 2014. These emissions units shall be tested within 6 months of June 17, 2019.
 - b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in b)(2)b and b)(2)c.
 - c. The capture efficiency test shall be conducted to demonstrate compliance with the 100% capture efficiency requirements for PTE #3 by using:
 - i. Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity and validity of the alternative and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)
 - ii. Method 2 from 40 CFR Part 60, Appendix A.
 - (a) Method 2 from 40 CFR Part 60, Appendix A shall be conducted to determine the volumetric flow rate of the exhaust stream(s) exiting the permanent total enclosure, corrected to standard conditions. If the building is being used as the permanent total enclosure, it may be necessary to measure the volumetric flow, corrected to standard conditions, of each gas stream entering the "enclosure" through a forced makeup air duct, using Method 2. The facial velocity (FV) shall be calculated using the following equation:

$$FV = (Q_o - Q_i) / A_n$$

where:

Q_o = the sum of the volumetric flow from all gas streams exiting the enclosure through an exhaust duct or hood;

Q_i = the sum of the volumetric flow from all gas streams into the enclosure through a forced makeup air duct and is equal to zero if there is no forced makeup air into the enclosure; and

A_n = the total area of all natural draft openings in the enclosure.



- (b) If the average facial velocity is measured at greater than 500 feet per minute (9,000 m/hr), the direction of air flow shall be assumed to be inward at all times during the compliance demonstration. If the average facial velocity is measured at less than 500 feet per minute, the continuous inward flow of air shall be verified at least once every 10 minutes for a minimum of 1 hour during the compliance demonstration, either by checking the flow or pressure meter(s) or through the use of streamers, smoke tubes, or tracer gases. All closed access doors and windows that are not considered natural draft openings shall also be checked once during the compliance demonstration for leakage around their perimeters using smoke tubes or tracer gases.
- (c) The permittee shall also measure and record the following information for the permanent total enclosure and each natural draft opening:
 - (i) the diameter of each natural draft opening;
 - (ii) the distance measured from each natural draft opening to each VOC emitting point in the process;
 - (iii) the distance measured from each exhaust duct or hood in the enclosure to each natural draft opening;
 - (iv) the total surface area of each natural draft opening and the surface area of the enclosure's four walls, floor and ceiling; and
 - (v) the ratio of the total surface area (sum) of all natural draft openings to the total surface area of the permanent total enclosure.
- d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration and on a consideration of the potential presence of interfering gases.
- e. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials and cleanup materials used during the performance test(s). If, pursuant to section 11.4 of Method 24, 40 CFR Part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent, support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent, support material, or cleanup material to demonstrate compliance until



the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

- f. Emission testing shall also be conducted to establish the operating limits (operating parameter values) for the monitoring devices required under sections d)(11) and d)(12) above as follows:
 - i. Monitor and record the combustion temperature either in the firebox of the RTO or immediately downstream of the firebox before any substantial heat exchange occurs at least once every fifteen minutes during each of the three runs of the compliance test.
 - ii. Calculate and record the average combustion temperature, at a 3-hour block average value, maintained during the compliance test. This average combustion temperature used to determine the minimum operating limit for the RTO.
 - iii. The pressure drop across the permanent total enclosure shall be at least -0.007 inch of water, as a 3-hour block average value.
- g. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacities, unless otherwise specified or approved by the Ohio EPA Northeast District Office.
- h. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s) and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).
- i. Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment and acquire data and information necessary to ensure that the operation of the 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.
- j. 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 Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA, Northeast District Office.

g) Miscellaneous Requirements

- (1) None.