



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL  
FRANKLIN 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: 01-08835**

**Fac ID: 0125040904**

**DATE: 11/3/2005**

Georgia Pacific Resins  
David Mason  
1975 Watkins Ave.  
Columbus, OH 43207

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

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

Sincerely,

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

CC: USEPA

CDO



**Permit To Install  
Terms and Conditions**

**Issue Date: 11/3/2005  
Effective Date: 11/3/2005**

**FINAL PERMIT TO INSTALL 01-08835**

Application Number: 01-08835  
Facility ID: 0125040904  
Permit Fee: **\$1000**  
Name of Facility: Georgia Pacific Resins  
Person to Contact: David Mason  
Address: 1975 Watkins Ave.  
Columbus, OH 43207

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**1975 Watkins Avenue  
Columbus, Ohio**

Description of proposed emissions unit(s):  
**Plant number 2 increase in methanol feed rate.**

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 quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

#### 3. 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

**Georgia Pacific Resins**  
**PTI Application: 01-08835**  
**Issued: 11/3/2005**

**Facility ID: 0125040904**

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)**

**Georgia Pacific Resins**  
**PTI Application: 01-08835**  
**Issued: 11/3/2005**

**Facility ID: 0125040904**

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.

**Georgia Pacific Resins**  
**PTI Application: 01-08835**  
**Issued: 11/3/2005**

**Facility ID: 0125040904**

**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.

Georgia Pacific Resins  
PTI Application: 01-08835  
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Facility ID: 0125040904

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

<u>Pollutant</u>	<u>Tons Per Year</u>
VOC	10.04
Formaldehyde	1.24
Methanol	1.10
Carbon Monoxide	39.57

## 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>
P003 - Plant No. 2 metal oxide process for formaldehyde and urea-formaldehyde production vented to catalytic incinerator (modification of PTI 01-344, see A.2.a below)	OAC rule 3745-31-05(A)(3)  OAC rule 3745-21-09(DD)  OAC rule 3745-21-09(EE)  40 CFR Part 60 Subpart VV  40 CFR Part 60 Subpart III

Applicable Emissions  
Limitations/Control  
Measures

The requirement of this rule also includes compliance with the requirements of OAC rules 3745-21-09(DD) and OAC rules 3745-21-09(EF).

Methanol emissions from the catalytic incinerator stack shall not exceed 0.1 lb/hr and 0.63 ton/yr.

See section A.2.a below.

See section A.2.b. below.

Formaldehyde emissions from the catalytic incinerator stack shall not exceed 0.27 lb/hr and 1.18 ton/yr.

See section A.2.c below.

See section A.2.d below.

Volatile organic compound (VOC) emissions from the catalytic incinerator stack shall not exceed 2.17 lbs/hr and 9.52 tons/yr.

Carbon monoxide (CO) emissions from the catalytic incinerator stack shall not exceed 9.03 lbs per hour and 39.57 tons per year.

Total fugitive VOC emissions resulting from process piping in the methanol feed system and formaldehyde production in P001 and P003 shall not exceed 0.47 ton methanol and 0.06 ton formaldehyde per year.

## 2. Additional Terms and Conditions

- 2.a** The hourly and annual emission limitations were established to reflect the potential to emit (PTE) for this emissions unit. The PTE is based upon a maximum annual production with venting of emissions to a catalytic incinerator that achieves 98% OC control efficiency across the catalyst bed. Therefore, no additional monitoring, record keeping and/or reporting other than the parametric monitoring of the catalytic incinerator is necessary to ensure compliance with these limitations.
- 2.b** The permittee shall implement a leak detection and repair (LDAR) program for fugitive VOC emissions from process piping associated with formaldehyde production in plants 1 (P001) and 2 (P003). The LDAR program shall comply with the requirements specified in sections C.2 thru C.17 of this permit. The following definitions shall apply to the LDAR program:
- i. "in gas/vapor service" means that the piece of equipment contains or contacts process fluid that is in the gaseous state at the operating conditions;
  - ii. "in heavy liquid service" means that the piece of equipment is not in gas/vapor service or in light liquid service;
  - iii. "in light liquid service" means that the piece of equipment contains or contacts process fluid that meets the conditions specified in paragraph (O)(3) of rule 3745-21-10 of the Administrative Code;
  - iv. "insitu sampling system" means a non-extractive sampler or an in-line sampler;
  - v. "in vacuum service" means that the piece of equipment is operating at an internal pressure that is at least 0.7 pound per square inch below ambient pressure; and
  - vi. "in VOC service" means that the piece of equipment contains or contacts a process fluid that is at least 10% VOC by weight.
- 2.c** The permittee shall vent the process vent stream to a catalytic incinerator that is designed and operated either to reduce the VOC emissions vented to it with an efficiency of at least 98 percent, by weight, or to emit VOC at a concentration

Emissions Unit ID: P003

less than 20 parts per million, by volume, dry basis.

- 2.d** The increase in the methanol feed rate resulted from process improvements that did exceed the capital expenditure threshold established in section 60.481 (a) and does not meet the definition of a modification under NSPS section 60.14 (e)(2). The new source performance standards (NSPS) regulations were not applicable because this process was installed prior to the applicability dates of January 5, 1981 (as listed in section 40 CFR 60.480(b)) for Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industries and October 21, 1983 (as listed in section 40 CFR 60.617(b)) for Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.

## **B. Operational Restrictions**

1. The average temperature of exhaust gases immediately upstream of the catalyst bed, for any 3-hour block of time when this emissions unit is in operation, shall not be more than 50 degrees Fahrenheit (or equivalent to 27.8 degrees Celsius) below the average temperature during the most recent stack test that demonstrated the emissions unit was in compliance. The average temperature difference across the catalyst bed, for any 3-hour block of time when this emissions unit is in operation, shall not be less than 80% of the average temperature difference during the most recent stack test that demonstrated the emissions unit was in compliance.

## **C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records 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 (or in equivalent degrees Celsius). The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee..

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

- a. all 3-hour blocks of time during which the average temperature of the exhaust gases immediately before the catalyst bed, was more than 50 degrees Fahrenheit (or equivalent to 27.8 degrees Celsius) below the average

temperature during the most recent stack test that demonstrated the emissions unit was in compliance;

- b. all 3-hour blocks of time during which the average temperature across the catalyst bed, was less than 80% of the average temperature difference during the most recent stack test that demonstrated the emissions unit was in compliance; and
- c. log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

2. Leak detection and repair program

- a. The permittee shall implement a leak detection and repair program for equipment in the process unit in accordance with the requirements specified in sections C.2.b to C.2.m of this permit.
- b. Except as otherwise provided in sections C.2.c and C.2.d of this permit, the permittee shall monitor equipment for leaks in accordance with the method specified in OAC rule 3745-21-10(F), as follows:
  - i. any pump in light liquid service shall be monitored monthly;
  - ii. any valve in gas/vapor service or in light liquid service shall be monitored monthly, except that quarterly monitoring may be employed anytime after no leaks are detected during 2 consecutive months (The quarterly monitoring shall begin with the next calendar quarter following the 2 consecutive months of no detected leaks and shall be conducted in the first month of each calendar quarter. The quarterly monitoring may continue until a leak is detected, at which time monthly monitoring shall be employed again);
  - iii. any of the following equipment shall be monitored within 5 calendar days after evidence of a leak or potential leak from the equipment by visual, audible, olfactory, or other detection method:
    - (a). any pump in heavy liquid service;
    - (b). any valve in heavy liquid service;

Emissions Unit ID: P003

- (c). any pressure relief device in light liquid service or in heavy liquid service;
        - (d). any flange or other connector; and
      - iv. any equipment in which a leak is detected, as described in section C.2.g of this permit, shall be monitored within 5 working days after each attempt to repair, unless the owner or operator believes that the equipment was not successfully repaired.
    - c. For any valve in gas/vapor service or in light liquid service, an alternative monitoring schedule may be employed in lieu of the monitoring schedule specified in section C.2.b.ii of this permit, as follows:
      - i. the valve is designated as difficult to monitor and is monitored each calendar year, provided the following conditions are met:
        - (a) construction of the process unit commenced prior to May 9, 1986;
        - (b) the owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 6 feet above a support surface; and
        - (c) the owner or operator of the valve has a written plan that requires monitoring of the valve at least 1 time per year; or
      - ii. the valve is designated as unsafe to monitor and is monitored as frequently as practical during safe to monitor times, provided the following conditions are met:
        - (a). the owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of monitoring on a monthly basis;
        - (b). the owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practical during safe to monitor times; or
      - iii. the valve is subject to an alternative monitoring schedule based on a skip period as specified in section C.12.

- d. Excluded from the monitoring requirements of section C.2.b of this permit are the following equipment:
  - i. any pump that has no externally actuated shaft penetrating the pump housing and that is designated for no detectable emissions as provided in section C.7 of this permit;
  - ii. any pump that is equipped with a dual mechanical seal which has a barrier fluid system and sensor that comply with the requirements specified in section C.8 of this permit;
  - iii. any pump that is equipped with a closed vent system capable of capturing and transporting any leakage from the pump seal to control equipment, provided the closed vent system and the control equipment comply with the requirements specified in sections C.9 and C.10 of this permit;
  - iv. any valve that has no externally actuated stem penetrating the valve and that is designated for no detectable emissions as provided in section C.7 of this permit; and
  - v. any valve that is subject to the alternative monitoring standard for valves based on the percentage of valves leaking as provided in C.13 of this permit.
- e. Any pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, unless the pump is equipped with a closed vent system capable of transporting any leakage from the pump seal to control equipment, and the closed vent system and control equipment comply with the requirements specified in sections C.9 and C.10 of this permit.
- f. Any sensor employed pursuant to section C.2.d.ii or C.3.b of this permit shall be checked daily, unless the sensor is equipped with an audible alarm.
- g. A leak is detected:
  - i. when a concentration of 1,000 ppmv or greater is measured from a potential leak interface of any equipment that is monitored for leaks using the method in OAC rule 3745-21-10(F);

- ii. when there is an indication of liquids dripping from the seal of a pump in light liquid service; or
  - iii. when a sensor employed pursuant to term C.2.d.ii or C.3.b of this permit indicates failure of the seal system, the barrier fluid system, or both.
- h. When a leak is detected as described in section C.2.g of this permit, the following procedures shall be followed:
- i. a weatherproof and readily visible identification tag, marked with the equipment identification number, is immediately attached to the leaking equipment;
  - ii. a record of the leak and any attempt to repair the leak is entered into the leak repair log kept pursuant to section C.2.k of this permit;
  - iii. the identification tag attached to the leaking equipment, other than a valve that is monitored pursuant to section C.2.b.ii above, may be removed after the leaking equipment is repaired; and
  - iv. the identification tag attached to a leaking valve that is monitored pursuant to section C.2.b.ii of this permit may be removed after the leaking valve is repaired, monitored for leaks for 2 consecutive months as specified in section C.2.b.ii, and found to have no detected leaks during those 2 consecutive months.
- i. When a leak is detected as described in section C.2.g, the leaking equipment shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except for a delay of repair as provided in section C.11. Leaking equipment shall be deemed repaired if the maximum concentration measured pursuant to section C.2.b.iv of this permit is less than 1,000 ppmv.
- j. When a leak is detected as described in section C.2.g, a first attempt at repair shall be made no later than 5 calendar days after the leak is detected; and the first attempts at repair shall include, but are not limited to, the following best practices where practicable:
- i. tightening of bonnet bolts;

Emissions Unit ID: P003

- ii. replacement of bonnet bolts;
  - iii. tightening of packing gland nuts; and
  - iv. injection of lubricant into lubricated packing.
- k. When a leak is detected as described in section C.2.g of this permit, the following information shall be recorded in a leak repair log:
- i. the identification number of the leaking equipment and, for leaks based on monitoring, the identification numbers of the leak detection instrument and its operator;
  - ii. the basis for the detection of the leak; for example, monitoring, visual inspection, or sensor;
  - iii. the date on which the leak was detected and the date of each attempt to repair the leaking equipment;
  - iv. the methods of repair applied in each attempt to repair the leaking equipment;
  - v. one of the following entries within 5 working days after each attempt to repair the leaking equipment:
    - (a) "Not monitored," denoting the leaking equipment was presumed to still be leaking and it was not monitored; or
    - (b). if the leaking equipment was monitored with a leak detection instrument, the maximum concentration that was measured as follows:
      - (aa) the actual reading in ppmv; or
      - (bb) "below 1,000," denoting less than one thousand ppmv; or
      - (cc) "above 1,000," denoting not less than one thousand ppmv; or
  - vi. if the leak is not repaired within 15 calendar days after the date on which it was detected:

- (a) "Repair delayed" and the reason for the delay; or
    - (b) if repair is being delayed until the next process unit shutdown due to technical infeasibility of repair, the signature of the owner or operator whose decision it was that repair is technically infeasible without a process unit shutdown;
    - (c) the expected date of successful repair of the leak;
    - (d) the dates of process unit shutdowns that occur while the leaking equipment is unrepaired; and
  - vii. the date on which the leak was successfully repaired.
  - l. The leak repair log shall be retained by the owner or operator of the process unit in a readily accessible location for a minimum of two years after the date on which the record was made.
  - m. The permittee shall submit semiannual reports to the Ohio EPA CDO by February 1 and August 1 for the preceding semiannual periods that includes information required under section D.2 of this permit.
3. Compressors:
- a. except as otherwise provided in section C.3.c to C.3.e, any compressor in the process unit shall comply with the requirements specified in section C.3.b;
  - b. the compressor shall be equipped with a seal that has a barrier fluid system and sensor which comply with the requirements specified in section C.8 of this permit;
  - c. excluded from the requirements of section C.3.b of this permit is any compressor that is designated for no detectable emissions as provided in C.7 of this permit;
  - d. excluded from the requirements of section C.3.b of this permit is any compressor that is equipped with a closed vent system capable of capturing and transporting any leakage from the compressor seal to control equipment, provided the closed vent system and the control equipment comply with the requirements specified in sections C.9 and C.10 of this permit;

- e. excluded from the requirements of section C.3.b of this permit is any reciprocating compressor that meets the following conditions:
    - i. the compressor was installed prior to May 9, 1986; and
    - ii. the owner or operator of the compressor demonstrates to the satisfaction of the director that recasting the compressor distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the requirements of section C.3.b. of this permit.
4. Pressure relief devices in gas/vapor service:
- a. except as otherwise provided in section C.4.e, any pressure relief device in gas/vapor service in the process unit shall comply with the requirements specified in section C.4.b to C.4.d;
  - b. except during pressure releases, the pressure relief device shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background, as measured by the method specified in OAC rule 3745-21-10(F);
  - c. no later than 5 calendar days after a pressure release, the pressure relief device shall be tested to confirm the condition of no detectable emissions in accordance with the method specified in OAC rule 3745-21-10(F);
  - d. after each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions as soon as practicable, but no later than 5 calendar days after the pressure release, except for a delay of repair as provided in C.11 of this permit;
  - e. excluded from the requirements of sections C.4.b to C.4.d is any pressure relief device that is equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to control equipment, provided the closed vent system and control equipment comply with the requirements specified in sections C.9 and C.10.
5. Sampling connection system:
- a. except as otherwise provided in section C.5.c, any sampling connection system in the process unit shall comply with the requirements specified in section C.5.b;

- b. the sampling connection system shall be equipped with a closed purge system or a closed vent system that meets one of the following requirements:
    - i. the purged process fluid is returned directly to the process line with 0 ppm VOC emissions to the ambient air;
    - ii. the purged process fluid is collected and recycled with 0 VOC emissions to the ambient air; or
    - iii. the closed purge system or closed vent system is designed and operated to capture and transport all the purged process fluid to control equipment that meet the requirements specified in section C.10; and
  - c. excluded from the requirements of section C.5.b of this permit is any sampling connection system that is an in-situ sampling system.
6. Open-ended valves or lines:
- a. any open-ended valve or line in the process unit shall be equipped with a cap, blind flange, plug, or second valve and shall comply with the requirements specified in sections C.6.b to C.6.d;
  - b. except during operations requiring the flow of process fluid through the open-ended valve or line, the cap, blind flange, plug, or second valve shall seal the open end of the open-ended valve or line;
  - c. if equipped with a second valve, the open-ended valve or line shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed; and
  - d. if a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves, but shall comply with section C.6.b of this permit at all other times.
7. Equipment designated for no detectable emissions:
- a. any equipment (pump, valve, or compressor) designated for no detectable emissions pursuant to sections C.2.d.i, C.2.d.iv or C.3.c shall comply with the requirements specified in sections C.7.b to C.7.d;

- b. the equipment shall be operated with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background as measured by method specified in OAC rule 3745-21-10(F);
  - c. the equipment shall be tested for compliance with section C.7.b initially upon designation and annually; and
  - d. the designation of the equipment shall be signed by the owner or operator of the equipment in the log kept pursuant to section C.14 of this permit.
8. Barrier fluid systems and sensors for pumps and compressors:
- a. when a pump or compressor is equipped with a seal that has a barrier fluid system and sensor which are employed to meet the section C.2.d.ii or C.3.a of this permit, the requirements of section C.8.b to C.8.d of this permit shall be met;
  - b. the barrier fluid system shall meet one of the following conditions:
    - i. the barrier fluid system is operated with a barrier fluid at a pressure that is at all times greater than the stuffing box pressure of the pump or compressor;
    - ii. the barrier fluid system is equipped with a barrier fluid degassing reservoir that is connected by a closed vent system to control equipment and the closed vent system and control equipment comply with the requirements specified in section C.9 and C.10 of this permit; and
    - iii. the barrier fluid system is equipped with a system that purges the barrier fluid into a process stream with zero (0) VOC emissions to the ambient air;
  - c. the barrier fluid system shall be in heavy liquid service or shall not be in VOC service; and
  - d. the barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both based on criteria determined by the owner or operator from design considerations and operating experience.
9. Closed vent systems:

- a. any closed vent system that is used to comply with the requirements of sections C.2.d.iii, C.3.d, C.4.e, or C.8.b.ii of this permit shall comply with the requirements specified in sections C.9.b to C.9.d.
- b. the closed vent system shall be designed and operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background, as measured by the method specified in OAC rule 3745-21-10(F);
- c. the closed vent system shall be tested for compliance with paragraph C.9.b initially and annually; and
- d. the closed vent system shall be operated at all times when emissions may be vented to it.

10. Control equipment:
- a. any control equipment that is used to comply with the requirements of paragraph C.2.d.iii, C.3.d, C.4.e, C.5.b.iii, C.8.b.ii or C.11.d.ii of this rule shall comply with the requirements specified in sections C.10.b to C.10.f of this permit;
  - b. if the control equipment is a vapor recovery system, it shall be designed and operated to recover VOC emissions vented to it with an efficiency of at least 95% by weight;
  - c. if the control equipment is an enclosed combustion device, it shall be designed and operated to reduce the VOC emissions vented to it with an efficiency of at least 95% by weight, or to provide a minimum residence time of 0.75 second at a minimum temperature of 1500 degrees Fahrenheit;
  - d. if the control equipment is a flare, it shall meet the following requirements:
    - i. the flare shall be designed for and operated with no visible emissions as determined by "Method 22, 40 CFR, Part 60, Appendix A," except for periods not to exceed a total of 5 minutes during any 120 consecutive minute;
    - ii. the flare shall be operated with either an electric arc ignition system or a pilot flame. If a pilot flame is employed, the flame shall be present at all times and shall be monitored with a thermocouple or any other equivalent device to detect the presence of the pilot flame. If an electric arc ignition system is employed, the arcing shall pulse continually and shall be monitored to detect any failure; and
    - iii. the flare shall be steam-assisted, air-assisted or non-assisted;
    - iv. the net heating value of the gas being combusted in the flare, as determined by the method specified in paragraph (P)(2) of rule 3745-21-10 of the Administrative Code, shall be three hundred Btu/scf or greater if the flare is steam-assisted or air-assisted, or shall be two hundred Btu/scf or greater if the flare is non-assisted.
    - v. except as provided in paragraph (DD)(10)(d)(vi) of this rule, the flare shall be designed and operated with an actual exit velocity, as determined by

Emissions Unit ID: **P003**

the method specified in paragraph (P)(3) of rule 3745-21-10 of the Administrative Code, less than sixty feet per second if the flare is steam-assisted or non-assisted, or less than the maximum permitted velocity, as determined in paragraph (P)(4) of rule 3745-21-10 of the Administrative Code, if the flare is air-assisted.

- vi. Excluded from the requirements of paragraph (DD)(10)(d)(v) of this rule is any steam-assisted or non-assisted flare that meets both of the following requirements:

(a) The net heating value of the gas being combusted in the flare, as determined by the method specified in paragraph (P)(2) of rule 3745-21-10 of the Administrative Code, shall be greater than one thousand Btu/scf.

(b) The flare shall be designed and operated with an actual exit velocity, as determined by the method specified in paragraph (P)(3) of rule 3745-21-10 of the Administrative Code, less than four hundred feet per second.

- e. the owner or operator of the control equipment shall monitor the control equipment to ensure that it is operated and maintained in conformance with its design; and
- f. the control equipment shall be operated at all times when emissions may be vented to it.

11. Delay of repair:

- a. a delay of repair that is employed pursuant to section C.2.i or C.4.d of this permit shall be allowed only as provided in sections C.11.b to C.11.f of this permit;
- b. a delay of repair shall be allowed if the repair is technically infeasible without a process unit shutdown. However, the repair shall occur before the end of the next process unit shutdown; or
- c. a delay of repair shall be allowed for a piece of equipment that is isolated from the process and that does not remain in VOC service (for example, isolated from the process and properly purged);

- d. a delay of repair for a valve shall be allowed if:
    - i. the owner or operator of the valve demonstrates that the emission of purged material resulting from immediate repair is greater than the emission likely to result from delay of repair; and
    - ii. when repair procedures are effected, the purged material is collected and destroyed or recovered in control equipment that meets the requirements specified in section C.10 of this permit;
  - e. a delay of repair for a pump shall be allowed if:
    - i. the repair requires the use of a dual mechanical seal system and associated barrier fluid system; and
    - ii. the repair is completed as soon as practicable, but no later than 6 months after the leak was detected; and
  - f. a delay of repair beyond a process unit shutdown shall be allowed for a valve if a valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. A delay of repair beyond the next process unit shutdown shall not be allowed for that valve unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.
12. Alternative monitoring schedule for valves based on a skip period:
- a. any owner or operator of a process unit may elect to implement an alternative monitoring schedule in lieu of the monitoring requirements specified in section C.2.b.ii of this permit, as provided in section C.2.c.ii of this rule. The alternative monitoring schedule shall be based on skipping quarterly monitoring periods provided the percentage of valves leaking is no more than 2.0. Any owner or operator who elects to implement an alternative monitoring schedule shall comply with the requirements specified in sections C.12.b to C.12.h. of this rule;
  - b. the owner or operator must notify the director prior to implementing this alternative monitoring schedule. Such notification must identify which valves will be subject to this alternative monitoring schedule and which work practice within

Emissions Unit ID: P003

section C.12.e will be implemented. Any valve in vacuum service, in heavy liquid service, or not in VOC service, shall be excluded from this alternative monitoring schedule;

- c. any valve subject to this alternative monitoring schedule shall comply initially with the monitoring requirements specified in section C.2.b.ii of this permit;
- d. any valve subject to this alternative monitoring schedule shall continue to be subject to the requirements specified in sections C.2.g to C.2.m of this permit.
- e. one of the following two alternative work practices for skipping monitoring periods may be implemented:
  - i. after 2 consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2.0, a monitoring program may begin in which the first quarter of every 2 consecutive quarterly leak detection periods is skipped;
  - ii. after 5 consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2.0, a monitoring program may begin in which the first 3 quarters of every 4 consecutive quarterly periods is skipped;
- f. if the percentage of valves leaking is greater than 2.0, the owner or operator shall comply with the monitoring requirements as specified in section C.2.b.ii of this permit, but may again elect to use this alternative monitoring schedule;
- g. the percentage of valves leaking shall be determined for the valves subject to this alternative monitoring schedule as the sum of the number of those valves found leaking during any portion of the current monitoring period and the number of those valves found leaking during a previous monitoring period for which repair has been delayed during the current monitoring period, divided by the total number of valves, and multiplied by one hundred;
- h. the following information pertaining to valves subject to this alternative monitoring schedule shall be recorded in a log that is kept in a readily accessible location:
  - i. a schedule of monitoring; and
  - ii. the percentage of valves leaking during each monitoring period.

13. Alternative monitoring standard for valves based on the allowable percentage of valves leaking:
- a. any owner or operator of a process unit may elect to implement an alternative monitoring standard in lieu of the monitoring requirements specified in section C.2.b.ii as provided in C.2.c.v. The alternative monitoring standard shall be based on maintaining the percentage of valves leaking at 2.0 or less. Any owner or operator who elects to implement an alternative monitoring standard shall comply with the requirements specified in sections C.13.b. to C.13.f;
  - b. the permittee must notify the Ohio EPA CDO prior to implementing this alternative monitoring standard;
  - c. all valves in gas/vapor service or in light liquid service in the process unit shall be subject to this alternative monitoring standard, except for those valves which are designated as unsafe to monitor as provided in section C.2.b.ii of this permit, those valves not in VOC service, and those valves in vacuum service;
  - d. the percentage of valves leaking, as determined in accordance with section C.13.f, shall not exceed 2.0. If the percentage of valves leaking is greater than 2.0, the owner or operator shall comply with the monitoring requirements as specified in section C.2.b.ii, but may again elect to use this alternative monitoring standard;
  - e. all valves subject to this alternative monitoring standard shall be tested for compliance with section C.13.d initially upon implementation and annually;
  - f. a compliance test shall be conducted in the following manner:
    - i. all valves subject to this alternative monitoring standard shall be monitored for leaks within a 1-week period by the method specified in OAC rule 3745-21-10(F);
    - ii. if an instrument reading of 1,000 ppmv or greater is measured, a leak is detected; and
    - iii. the percentage of valves leaking shall be determined as the number of valves for which a leak is detected, divided by the number of valves monitored, and multiplied by 100; and



- i. a list of identification numbers for valves designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve;
  - ii. a list of identification numbers for valves designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the schedule for monitoring each valve; and
  - iii. a list of identification numbers for valves subject to the alternative monitoring schedule based on a skip period, a schedule for monitoring, and the percentage of valves leaking during each monitoring period;
- d. the following information pertaining to closed vent systems and control equipment described in sections C.9 and C.10 of this permit shall be recorded and kept in a readily accessible location:
- i. detailed schematics, design specifications, and piping and instrumentation diagrams;
  - ii. the dates and descriptions of any changes in the design specifications;
  - iii. a description of the parameter or parameters monitored, as required in section C.10.d, to ensure that the control equipment is operated and maintained in conformance with its design, and an explanation of the reason for selecting such parameter or parameters;
  - iv. periods when the closed vent systems and control equipment are not operated as designed, including periods when a flare pilot light does not have a flame; and
  - v. dates of startups and shutdowns of the closed vent systems and control equipment.
- e. The following information pertaining to barrier fluid systems and sensors described in section C.8 of this permit shall be recorded in a log that is kept in a readily accessible location:
- i. a list of identification numbers of pumps and compressors equipped with such barrier fluid systems and sensors;

- ii. the criteria that indicate failure of the seal system, the barrier fluid system, or both, as required in section C.8.d of this permit and an explanation of the criteria; and
    - iii. Any changes to such criteria and the reasons for the changes.
  - f. The following information for use in determining an exemption for the process unit as provided in section C.17.a of this permit shall be recorded in a log that is kept in a readily accessible location:
    - i. an analysis demonstrating the design capacity of the process unit;
    - ii. a statement listing the feed and raw materials and products from the process unit and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohols; or
    - iii. an analysis demonstrating that no equipment is in VOC service.
  - g. The following information pertaining to specific equipment that are exempt as provided in section C.17.b of this permit shall be recorded in a log that is kept in a readily accessible location:
    - i. a list of identification numbers of equipment in vacuum service;
    - ii. a list of identification numbers of equipment not in VOC service and the information or data used to demonstrate that the equipment is not in VOC service; and
    - iii. a list of equipment subject to an equivalent emission requirement that is approved by the director pursuant to section C.16 of this permit.
- 15. Reporting
  - a. The permittee shall comply with the reporting requirements specified in section C.15.b. to C.15.d of this permit.
  - b. For compliance tests required under sections C.7.c and C.9.c of this permit, the requirements of OAC rule 3745-21-10 (A)(3) and (A)(4) (pertaining to notification of intent to test) shall be met. The results of such compliance tests shall be reported to the Ohio EPA Central District Office within 30 days after the

test date.

- c. The results of compliance tests required under section C.4.c of this permit shall be reported semiannually to the Ohio EPA Central District Office. The semiannual reports shall be submitted by the first day of February and August and shall include information for the preceding semiannual period.
  - d. Any semiannual reports required under paragraph C.2.m of this permit may be sent to the Ohio EPA CDO.
16. Equivalent requirement.
- a. Any owner or operator of a process unit may apply to the director for determination of an equivalent requirement in lieu of the requirements specified in section C.2 to C.10. The determination of equivalence will be evaluated by the guidelines specified in sections C.16.b to C.16.d. If the director approves an equivalent requirement for a process unit, said requirement shall be specified in the special terms and conditions of the permit to operate or variance issued by the director for the process unit.
  - b. The owner or operator applying for a determination of equivalency shall be responsible for collecting and verifying test data to demonstrate the proposed equivalence.
  - c. The equivalent requirement shall achieve a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC that would be achieved by compliance with section C.2.
  - d. The Ohio EPA Central District Office may condition the approval of equivalence as necessary to ensure the same emission reduction as the applicable requirements of section C.2.
17. Exempted from the requirements of sections C.2 to C.6 are the following equipment:
- a. any equipment not in VOC service, as determined in accordance with OAC rule 3745-21-10 (O)(2);
  - b. any equipment in vacuum service; and
  - c. any equipment subject to an equivalent emission limitation as provided in section C.16 of this permit.

18. The permit to install for this emissions unit P003 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the ISCST model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the ISCST model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Formaldehyde

Maximum Hourly Emission Rate (lbs/hr): 0.27

TLV (mg/m<sup>3</sup>): 0.37

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 6.5

MAGLC (ug/m<sup>3</sup>): 6.5

Pollutant: Carbon Monoxide

Maximum Hourly Emission Rate (lbs/hr): 9.03

TLV (mg/m<sup>3</sup>): 29

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 217.4

MAGLC (ug/m<sup>3</sup>): 690

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

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would

Emissions Unit ID: **P003**

result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

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

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

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

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

#### **D. Reporting Requirements**

1. In accordance with paragraph A.1 of the General Terms and Conditions, the permittee shall submit deviation (excursion) reports that identify all 3-hour blocks of time during which the average temperature of exhaust gases immediately before the catalyst bed or the average temperature difference across the catalyst bed did not comply with the temperature limitation specified in section B.1, above, and the number of hours of downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
2. In accordance with section C.2.m of this permit for the LDAR program, the permittee shall submit semiannual reports to the Ohio EPA CDO by the first day of February and August and shall include the following information for the preceding semiannual

periods:

- a. the process unit identification;
- b. the number of pumps in light liquid service excluding those pumps designated for no detectable emissions under the provision of section C.2.d.i and those pumps complying with section C.2.d.iii;
- c. the number of valves in gas/vapor service or in light liquid service excluding those valves designated for no detectable emission under the provision of section C.2.d.iv and those valves subject to the alternative standard for monitoring under the provision of section C.2.d.v;
- d. the number of compressors excluding those compressors designated for no detectable emissions under the provision of section C.3.c. and those compressors complying with section C.3.d or C.3.e;
- e. for each month during the semiannual period:
  - i. the number of pumps in light liquid service for which leaks were detected;
  - ii. the number of pumps in light liquid service for which leaks were not repaired within fifteen calendar days after the date of leak detection;
  - iii. the number of valves in gas/vapor service or in light liquid service for which leaks were detected as described in section C.2.g of this permit; and
  - iv. the number of valves in gas/vapor service or in light liquid service for which leaks were not repaired within 15 calendar days after the date of leak detection;
  - v. the number of compressors for which leaks were detected as described in paragraph C of this permit;
  - vi. the number of compressors for which leaks were not repaired within 15 calendar days after the date of leak detection; and
  - vii. the facts that explain each delay of repair allowed pursuant to section C.11; and

- f. the dates of process unit shutdowns that occurred within the semiannual period.
3. The permittee shall notify the Ohio EPA, CDO prior to implementing an alternative monitoring schedule. Such notification must identify which valves will be subject to this alternative monitoring schedule and which work practice within section C.12.e will be implemented. Any valve in vacuum service, in heavy liquid service, or not in VOC service, shall be excluded from this alternative monitoring schedule.
4. The permittee must notify the Ohio EPA, CDO prior to implementing the alternative monitoring standard based on allowable percentage of valves leaking, as referenced in section C.13.a, prior to implementing this alternative monitoring standard.
5. The facility shall submit annual reports to the Ohio EPA, which at a minimum specify the total methanol, formaldehyde, and VOC emissions from the catalytic incinerator and the total fugitive emissions of methanol and formaldehyde, for the previous calendar year (January 1 through December 31). The reports shall be submitted by April 15 of each year. This reporting requirement may be satisfied by including and identifying the specific emission data for this emissions unit in the annual Fee Emission Report.

## E. Testing Requirements

1. Compliance with the emission limitations outlined in section A.1. of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitations:

The permittee shall vent the process vent stream to a catalytic incinerator that is designed and operated either to reduce the VOC emissions vented to it with an efficiency of at least 98%, by weight, or to emit VOC at a concentration less than 20 parts per million, by volume, dry basis.

### Applicable Compliance Method:

Compliance with the control efficiency requirements across the catalytic incinerator was demonstrated in October, 2003 at a methanol feed rate of 20 gpm. If required, the emission testing shall be conducted to demonstrate compliance with the hourly allowable for methanol, formaldehyde and organic compound as well as the control efficiency across the catalytic incinerator. 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 3745-21-10(C)(2)(b). 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.

- b. Emission Limitations:  
Methanol emissions from the catalytic incinerator stack shall not exceed 0.14 lb/hr and 0.63 ton/yr.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the hourly emission limitation through emission testing required in section E.1.a.

The annual methanol limitation is based on the maximum PTE and compliance with the annual limit shall be assumed as long as the permittee demonstrates compliance with the hourly emission limitation and complies with the parametric monitoring, recordkeeping and reporting requirements in this permit.

- c. Emission Limitations:  
Formaldehyde emissions from the catalytic incinerator stack shall not exceed 0.27 lb/hr and 1.18 tons/yr.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the hourly emission limitation through emission testing required in section E.1.a.

The annual formaldehyde limitation is based on the maximum PTE and compliance with the annual limit shall be assumed as long as the permittee demonstrates compliance with the hourly emission limitation and complies with the parametric monitoring, recordkeeping and reporting requirements in this permit.

- d. Emission Limitations:  
VOC emissions from the catalytic incinerator stack shall not exceed 2.17 lbs/hr and 9.52 tons/yr.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the hourly emission limitation through emission testing required in section E.1.a.

The annual VOC limitation is based on the maximum PTE and compliance with

Emissions Unit ID: P003

the annual limit shall be assumed as long as the permittee demonstrates compliance with the hourly emission limitation and complies with the parametric monitoring, recordkeeping and reporting requirements in this permit.

- e. Emission Limitations:  
Total fugitive VOC emissions resulting from process piping in the methanol feed system and formaldehyde production in P001 and P003 shall not exceed 0.47 ton methanol and 0.06 ton formaldehyde per year.

Applicable Compliance Method:

The annual emissions shall be determined by calculations that use TNRCC emission factors. There is an emission factor for each category of components that may leak, i.e., valves, connectors and pumps in light liquid, heavy liquid and gas-vapor service. The total number of components for that category is then multiplied by the emission factor times any applicable emission reduction for a light liquid and a heavy liquid. The emissions shall be calculated for both methanol and formaldehyde.

- f. Emission Limitations:  
CO emissions shall not exceed 9.03 lbs per hour and 39.57 tons per year.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the hourly emission limitation through emission testing required in section E.1.a.

The annual CO limitation is based on the maximum PTE and compliance with the annual limit shall be assumed as long as the permittee demonstrates compliance with the hourly emission limitation.

## F. Miscellaneous Requirements

None