

TENNESSEE AIR POLLUTION CONTROL BOARD  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
NASHVILLE, TENNESSEE 37243-1531



Permit to Construct or Modify an Air Contaminant Source Issued Pursuant to Tennessee Air Quality Act

Date Issued: May 14, 2012

Permit Number:

965715P

Date Expires: June 1, 2013

Issued To:

Eastman Chemical Company (MSOP-21)

Installation Address:

South Eastman Road  
Kingsport

Installation Description:

Diketene Refining and Acetic Anhydride Recovery

Emission Source Reference No.

82-1003-08  
NSPS, MACT

The holder of this permit shall comply with the conditions contained in this permit as well as all applicable provisions of the Tennessee Air Pollution Control Regulations.

CONDITIONS:

1. The application that was utilized in the preparation of this permit is dated February 23, 2012, and is signed by H. David Miller, Chemicals Manufacturing Division Superintendent for the permitted facility. If this person terminates employment or is assigned different duties and is no longer the responsible person to represent and bind the facility in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification shall be in writing and submitted within thirty (30) days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the facility in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the facility until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

(conditions continued on next page)

TECHNICAL SECRETARY

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

NON-TRANSFERABLE

POST AT INSTALLATION ADDRESS

CN-0754 (Rev. 9-92)

RDA-1298

**Diketene Refining and Acetic Anhydride Recovery System (82-1003-08)**  
**Emission Source Specific Operating Permit Conditions\***  
**Conditions E3-1 through E3-10 Apply to Source**

1. EASTMAN SOURCE NUMBER	2. EMISSION SOURCE DESCRIPTION	3. EMISSION SOURCE REFERENCE NUMBER	4. MSOP NUMBER	5. PERMIT NUMBER		
PES B-244-1	Diketene Refining and Acetic Anhydride Recovery System	82-1003-08	MSOP-21	965715P		
6. ID	7. PORTION OF SOURCE SUBJECT TO REQUIREMENT	8. POLLUTANT	9. UNDERLYING APPLICABLE REQUIREMENT(S)	10. LIMITATION OR STANDARD	11. REFERENCE TEST METHOD	12. PERIODIC MONITORING METHOD(S)
FEDERALLY AND STATE ENFORCEABLE CONDITIONS						
E3-1	Entire Source	Visible Emissions	TAPCR 1200-03-05	20% Opacity	EPA Method 9	Visible Emissions Evaluation: Emission units requiring initial VEEs – None, per TAPCD Opacity Matrix dated September 12, 2005.
E3-2	Vents A, E, M, N, and P	VOC and other organics	TAPCR 1200-03-07-.07(2)	3.46 lb/hr	EPA Method 18	Vent A – Parametric Monitoring: Daily production rate. See Operating Plan in Title V Application dated February 28, 2012, PES B-244-1, pages 41 and 42.
E3-3	Tank 12 (Vent C) Dumpsters #1 and #2 (Vent D) Tank 11 (Vent F) Tanks 3 and 6 (Vent H) Tanks 23, 24, 25 (Vent J) Tank 15 (Vent O) Dumpster (Vent Q) Tank 35 (Vent S) Tank 206 (Vent T)	VOC and other organics	TAPCR 1200-03-07-.07(2)	2.06 tons/year	Engineering Assessment	Vents E, M, N, and P – Certification
E3-4	Flow Diagram Point G (Equipment Leaks)	VOC	TAPCR 1200-03-07-.07(2)	Quarterly Leak Inspection and Repair (Fugitive VOC emissions from pumps, valves, flanges, etc. are estimated at 9.72 tons/year)	See Item 10	See Item 10

\* See Table Notes for additional clarification of permit conditions.

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E3-5	Entire Source, excluding fugitive equipment leaks from pumps, valves, flanges, etc.	VOC and other organics	TAPCR 1200-03-07-.07(2)	17.4 tons/year	Engineering Assessment	Monitoring, recordkeeping, and reporting required by ID Limitations E3-2 and E3-3 will assure compliance with this limit		
E3-6	Miscellaneous Organic Manufacturing Chemical Process Units	HAPs	40 CFR 63 Subpart FFFF – National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing  A listing of specific applicability determinations for 40 CFR Parts 60 and 63 in effect as of the issuance date of this permit is found in Attachment 2. Changes that result in a change of applicability shall follow the applicable procedures in Section C of this permit and include an update to Attachment 2.					
E3-7	Miscellaneous Organic Manufacturing Chemical Process Units	HAPs	40 CFR 63 Subpart A – General Provisions					
E3-8	Portion of source subject to NSPS	VOC	40 CFR 60 Subpart A – General Provisions					
E3-9	Portion of source subject to NSPS	VOC	40 CFR 60 Subpart VVa – Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry  A listing of specific applicability determinations for 40 CFR Parts 60 and 63 in effect as of the issuance date of this permit is found in Attachment 2. Changes that result in a change of applicability shall follow the applicable procedures in Section C of this permit and include an update to Attachment 2.					

\* See Table Notes for additional clarification of permit conditions.

**Table Notes**

<b>Item 1</b>	<b>EASTMAN SOURCE NUMBER</b> Permittee's designation for the emission source.
<b>Item 3</b>	<b>EMISSION SOURCE REFERENCE NUMBER</b> TDAPC assigned number for the emission source.
<b>Item 4</b>	<b>MSOP NUMBER</b> Permittee's designation for major source operating permit
<b>Item 5</b>	<b>PERMIT NUMBER</b> TDAPC assigned major source operating permit number
<b>Item 6</b>	<b>ID</b> Emission limitation or standard identification
<b>Item 7</b>	<b>PORTION OF SOURCE SUBJECT TO REQUIREMENT</b> Identifies emission units to which the permit term or condition applies.
<b>Item 8</b>	<b>POLLUTANT</b> Identifies the air contaminant, regulated air pollutant, or other parameter to which the emission limitation or standard applies.
<b>Item 9</b>	<b>UNDERLYING APPLICABLE REQUIREMENTS</b> Specifies and references the origin of and authority for each term or condition. States the compliance dates for effective applicable requirements with future compliance dates.

**Glossary**

Descriptions of regulatory citations that appear in Item 9 are given below:

NSPS	Standards Of Performance For New Stationary Sources (40 CFR Part 60)
40 CFR 60 Subpart A	General Provisions
40 CFR 60 Subpart D	Standards of Performance for Fossil-Fuel Fired Steam Generators for Which Construction is Commenced After August 17, 1971
40 CFR 60 Subpart Da	Standards of Performance for Electric Utility Steam Generating Units for Which Construction Is Commenced After September 18, 1978
40 CFR 60 Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
40 CFR 60 Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984
40 CFR 60 Subpart Y	Standards of Performance for Coal Preparation Plants
40 CFR 60 Subpart VV	Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry
40 CFR 60 Subpart DDD	Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing industry
40 CFR 60 Subpart III	Standards of Performance for Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes
40 CFR 60 Subpart NNN	Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations
40 CFR 60 Subpart	Standards of Performance for Volatile Organic Compound (VOC)

RRR	Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes
NSPS Subpart YYY	Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Wastewater
40 CFR 60 Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
40 CFR Part 63	National Emission Standards For Hazardous Air Pollutants For Source Categories
40 CFR 63 Subpart A	General Provisions
40 CFR 63 Subpart F	National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry
40 CFR 63 Subpart G	National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater
40 CFR 63 Subpart H	National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks
40 CFR 63 Subpart DD	National Emission Standards for Hazardous Air Pollutants From Off-Site Waste and Recovery Operations
40 CFR 63 Subpart GGG	National Emissions Standards for Pharmaceutical Production
40 CFR 63 Subpart JJJ	National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins
40 CFR 63 Subpart MMM	National Emission Standards for Hazardous Air Pollutants For Pesticide Active Ingredient Production
40 CFR 63 Subpart FFFF	National Emission Standards for Hazardous Air Pollutants Miscellaneous Organic Chemical Manufacturing
40 CFR 63 Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters
40 CFR Part 68	Chemical Accident Prevention Provisions.

**Item 10 LIMITATION OR STANDARD**

Gives the regulatory citation or expression of the emission limitation or standard. This expression identifies any difference in form as compared to the applicable requirement upon which the term or condition is based.

Emission work practice standards notated as "Quarterly Leak Inspection and Repair" or "Annual Leak Inspection and Repair" are detailed below:

**Quarterly and Annual Leak Inspection**

- (a) (1) **Quarterly Leak Inspection:** A leak inspection of all equipment in air contaminant service (contains or contacts a process fluid that is at least 10% air contaminant by weight) that is not "in heavy liquid service" or "in vacuum service" shall be performed once per calendar quarter. For this inspection, detection methods incorporating sight (e.g. looking for drips), sound (e.g. hissing sounds indicative of a leak), or smell (e.g. strong odors traceable to piping leaks) shall be used as appropriate. "Equipment" includes piping, pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, and flanges. "In heavy liquid service" means when less than 20 weight percent of the process fluid consists of air contaminants having pure component vapor pressures greater than 0.044 psia at 68 degrees F, and the process fluid is not in the gaseous state at operating conditions. "In vacuum service" means equipment that is operating at an internal pressure that is at least 0.7 psia below ambient pressure. Equipment that is covered by insulation or obstructed from sight when standing on existing floors or walkways is exempt from this inspection. Equipment that is subject to a federally required work practice

standard (e.g. 40 CFR Part 60 Subpart VV, 40 CFR Part 63 Subpart H, 40 CFR Part 265 Subpart BB) is exempt from this inspection. Equipment that is in air contaminant service less than 300 hours in a calendar quarter is exempt from this inspection for that quarter.

- (2) **Annual Leak Inspection:** A leak inspection of all equipment in air contaminant service (contains or contacts a process fluid that is at least 10% air contaminant by weight) that is not "in heavy liquid service" or "in vacuum service" shall be performed once per calendar year. For this inspection, detection methods incorporating sight (e.g. looking for drips), sound (e.g. hissing sounds indicative of a leak), or smell (e.g. strong odors traceable to piping leaks) shall be used as appropriate. "Equipment" includes piping, pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, and flanges. "In heavy liquid service" means when less than 20 weight percent of the process fluid consists of air contaminants having pure component vapor pressures greater than 0.044 psia at 68 degrees F, and the process fluid is not in the gaseous state at operating conditions. "In vacuum service" means equipment that is operating at an internal pressure which is at least 0.7 psia below ambient pressure. Equipment that is covered by insulation or obstructed from sight when standing on existing floors or walkways is exempt from this inspection. Equipment that is subject to a federally required work practice standard (e.g. 40 CFR Part 60, Subpart VV, 40 CFR Part 63, Subpart H, 40 CFR Part 265, Subpart BB) is exempt from this inspection. Equipment that is in air contaminant service less than 720 hours in a calendar year is exempt from this inspection for that year.

- (b) When a leak is detected, an initial attempt at repair shall be made no later than 10 calendar days after the leak is detected. Repair or replacement of leaking equipment shall be completed within 30 calendar days after detection of each leak, except as provided in paragraph (c) below.

- (c) (1) Delay of repair of leaking equipment will be allowed if the repair is technically infeasible without a process unit shutdown or if repair personnel would be exposed to an immediate danger if attempting a repair without a process shutdown. Repair of this equipment shall occur by the end of the next process unit shutdown.
- (2) Delay of repair of equipment for which leaks have been detected is allowed for equipment that is isolated from the process and that does not remain in air contaminant service.
- (3) Delay of repair for valves, connectors, and agitators is also allowed if the owner or operator determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair.
- (4) Delay of repair beyond a process unit shutdown will be allowed for a valve if 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. Delay of repair beyond the second process unit shutdown will not be allowed unless the third process unit shutdown occurs sooner than 6 months after the first process unit shutdown.
- (5) Delay of repair of pumps for up to 6 months after leak detection is allowed if the pump is replaced with (i) a dual mechanical seal system, (ii) a pump with no externally actuated shaft penetrating the pump housing, or (iii) a new system that the permittee has determined will provide better performance.

(d) **Recordkeeping Requirements**

- (1) Records must be maintained that identify piping systems or process areas subject to this plan.
- (2) Records of all inspections must be kept documenting the inspection was conducted and the date of the inspection. If no leaks are detected during the inspection, the record must indicate this result.
- (3) When a leak is detected during the quarterly inspection, the following information shall be recorded:
- (i) Component identifier or description of location and operator name, initials, or identification number.
- (ii) The date the leak was detected.

- (iii) The date the initial attempt at repair is made.
- (iv) The date of successful repair of the leak. "Successful repair" means the leak is no longer detected using the inspection procedure outlined in item 10(a).
- (v) "Repair delayed" and the reason for the delay if a leak is not repaired within 30 days after discovery of the leak.

## Item 11 REFERENCE TEST METHODS

Those exclusive emissions measuring test method(s) or procedure(s) by which demonstration of compliance with the emission limitation or standard would be determined as prescribed by the applicable requirement or if requested by the Technical Secretary pursuant to 1200-03-10-.01(2).

Citations for performance test methods that may appear in item 11 are shown below:

<u>Pollutant or Parameter</u>	<u>Testing Methodology</u>
Gas Volumetric Flow Rate	EPA Methods 2, 2A, 2C, and 2D as published in the current 40 CFR 60, Appendix A
Dry Molecular Weight	EPA Method 3 as published in the current 40 CFR 60, Appendix A
Oxygen and Carbon Dioxide	EPA Method 3A as published in the current 40 CFR 60, Appendix A
Moisture Content	EPA Method 4 as published in the current 40 CFR 60, Appendix A
Particulate Matter	EPA Method 5 as published in the current 40 CFR 60, Appendix A
Sulfur Dioxide	EPA Method 6, 6A, 6B, or 6C as published in the current 40 CFR 60, Appendix A
Nitrogen Oxides	EPA Method 7, 7A, 7B, 7C, 7D, or 7E as published in the current 40 CFR 60, Appendix A
Sulfuric Acid Mist and Sulfur Dioxide	EPA Method 8 as published in the current 40 CFR 60, Appendix A
Carbon Monoxide	EPA Method 10 as published in the current 40 CFR 60, Appendix A
Total Fluoride Emissions	EPA Method 13A or 13B as published in the current 40 CFR 60, Appendix A
Gaseous Organic Compounds	EPA Method 18 as published in the current 40 CFR 60, Appendix A
Volatile Organic Compounds Leaks	EPA Method 21 as published in the current 40 CFR 60, Appendix A
Total Gaseous Nonmethane Organics	EPA Method 25 as published in the current 40 CFR 60, Appendix A
Total Gaseous Organics	EPA Method 25A as published in the current 40 CFR 60, Appendix A
Hydrogen Chloride & Chlorine	EPA Method 26 or 26A as published in the current 40 CFR 60, Appendix A
Visible Emissions (6 minute average)	EPA Method 9 as published in the current 40 CFR 60, Appendix A
Visible Emissions (Fugitives from Material Sources and Smoke from Flares)	EPA Method 22 as published in the current 40 CFR 60, Appendix A
Visible Emissions (aggregate count)	Tennessee Visible Emission Evaluation Method 2 as adopted by the Tennessee Air Pollution Control Board on August 24, 1984.
Visible Emissions (Roads and Parking Areas)	Tennessee Visible Emission Evaluation Method 1 as adopted by the Tennessee Air Pollution Control Board on April 29, 1982, as amended on September 15, 1982 and as amended on August 24, 1984.
Fugitive Dust Emissions Crossing a Property Line	Tennessee Visible Emission Evaluation Method 4 as adopted by the Tennessee Air Pollution Control Board on April 16, 1986.
Sulfur Content of Fuels	EPA Method 19 as published in the current 40 CFR 60, Appendix A

In cases where the underlying applicable requirement does not specify performance testing requirements, the following shall apply:

- (a) Performance tests shall be conducted and data reduced in accordance with the test methods and procedures listed in Item 11 unless the Technical Secretary (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, (3) approves the use of an alternative method the results of which he has determined to be adequate for indicating whether a specific source is in compliance or (4) approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors.
- (b) Performance tests shall be conducted under such conditions as the Technical Secretary shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Technical Secretary such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.
- (c) The owner or operator of an affected facility shall provide the Technical Secretary at least 30 days prior notice of any performance test to afford the Technical Secretary the opportunity to have an observer present. The Technical Secretary may waive the right to such prior notice.
- (d) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:
  - (1) Sampling ports adequate for test methods applicable to such facility. This includes (i) constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures and (ii) providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.
  - (2) Safe sampling platform(s).
  - (3) Safe access to sampling platform(s).
  - (4) Utilities for sampling and testing equipment.
- (e) Unless otherwise specified in the applicable requirement, each performance test shall consist of three separate runs using the applicable test method. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Technical Secretary's approval, be determined using the arithmetic mean of the results of the two other runs.

## **Item 12 PERIODIC MONITORING METHODS**

- (a) Includes all of the following:
  - (1) All emissions monitoring and analysis procedures or test methods required under the applicable requirements, including any procedures and methods promulgated pursuant to sections 114(a)(3) or 504(b) of the Federal Act.
  - (2) Those monitoring and related recordkeeping and reporting requirements previously prescribed by the Technical Secretary in accordance with the powers granted to him at chapter 1200-03-10.
  - (3) Where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit, as reported pursuant to Condition B.2. These requirements assure use of such terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirements.
  - (4) Requirements concerning the use, maintenance, and installation of monitoring equipment or methods.



- (b) **Operating Plans:** Operating Plans referred to in this column are found in the permit application with page references given in this column. These Operating Plans are incorporated by reference into this Title V permit as fully enforceable conditions of the permit. Changes to an Operating Plan shall follow the applicable procedures in Section C of this permit. A permit shield does not attach to these changes unless the proposed change is processed through significant modification procedures.
- (c) **Applicability:** No monitoring or recordkeeping is required during periods during which the source is not in operation.
- (d) **Generic Periodic Monitoring Methods:** Additional requirements for periodic monitoring methods notated in item 12 by generic headings are shown below:
- (1) **Certification:** Any emission unit or activity which is a subset of a process emission source, fuel burning installation, or incinerator, and which has a potential to emit less than 5 tons per year of a regulated air pollutant, by annual certification of compliance as required in item 1200-03-09-.02(11)(d)1.(ii)(I), shall be considered to meet the monitoring and related recordkeeping and reporting requirements of subpart 1200-03-09-.02(11)(e)1.(iii) and 1200-03-10-.04(2)(b)(1), and the compliance requirements of subpart 1200-03-09-.02(11)(e)3.(i) for that regulated air pollutant except where generally applicable requirements of the state implementation plan specifically impose monitoring and related record keeping and reporting requirements, or except where any applicable procedures and methods are required pursuant to rule 1200-03-10-.04. This provision shall not apply to emissions unit or activity that is subject to monitoring and related record keeping and reporting requirements under Chapters 1200-03-11 and 1200-03-31, and subparagraph 1200-03-02-.01(1)(dd).
- (2) **Parametric Monitoring:** (only applies to applicable requirements which do not specify monitoring requirements and the permit must specify periodic monitoring or testing pursuant to 1200-03-09-.02(11)(e)1.(iii)(I)II.)
- (i) The permittee must implement a system to monitor the control system parameters or process operating parameters shown in item 12 utilizing the averaging times shown.
- (ii) The permittee must develop and obtain the approval of the Technical Secretary of an operating plan that includes a description of the parameter(s) to be monitored; an explanation for the selection of the parameter; description and location (if applicable) of monitoring equipment; the range (and the rationale for establishing the range) for each monitored parameter that indicates proper operation and maintenance of the control technology or pollution prevention measure; monitoring frequency; and any necessary data collection/compression procedures.
- (iii) When the approved operating plan utilizes continuous parametric monitoring systems (CPMS), the permittee may use manual readings of the applicable parameter taken once per operating shift as a backup during periods of CPMS breakdown.
- (iv) An excursion means:
- (I) A departure from an indicator range established for monitoring by this Title V permit, consistent with any averaging period specified for averaging the results of the monitoring, or,
- (II) Availability of less than 75 percent of the measured values within a given averaging period unless manual readings of the parameter are made as a backup during periods of CPMS breakdown, or,
- (III) In cases where measured values are not averaged, when a measurement is missed.
- (v) For each excursion, that does not demonstrate noncompliance with an applicable requirement, of a monitored parameter outside the range stated in the operating plan for an applicable averaging period, the permittee may be deemed to have failed to have maintained or operated the source including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Each excursion shall be reported as an instance of deviation from permit requirements in semi-annual reports submitted pursuant to Condition B3.
- (vi) For continuous monitoring systems, the following shall apply;

- (I) The monitoring system shall measure data values at least once every 15 minutes.
  - (II) The owner or operator shall record either:
    - (A) Each measured value; or
    - (B) At least one measured value every 15 minutes; or
    - (C) Block average values for 15-minute or shorter periods calculated from all measured data values during each period or at least one measured data value per minute if measured more frequently than once per minute.
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- (vii) Where the permit requires twenty-four hour block averages of each continuously monitored parameter, the 24-hour block average shall be calculated for each 24 hour period of time (these periods may be from midnight to midnight or another daily period). The 24 hour block average shall be calculated as either the average of all values for a monitored parameter recorded under item 2 above during the 24 hour period or as the average of all valid one-hour averages for a monitored parameter recorded during the 24 hour period. If one-hour averages are used, they shall be calculated from four or more equally spaced data averages over each one-hour period, except during periods of monitoring system breakdown, monitoring system repairs, and periods of non-operation of the source. During these periods, a valid one-hour average shall consist of at least two 15-minute averages.
  - (viii) If the average value of a monitored parameter is within the range stated in the operating plan for an applicable averaging period, the owner or operator shall either:
    - (I) Retain the average value for the averaging period for 5 years and discard, at or after the end of that averaging period, the 15-minute or more frequent average values and readings recorded; or
    - (II) Retain the recorded data for 5 years.
  - (ix) If the average value of a monitored parameter is outside the range stated in the operating plan for an applicable averaging period, the owner or operator shall retain the data recorded in item 2 above for 5 years.
  - (x) Data recorded during periods of monitoring system breakdown, monitoring system repairs, and periods of non-operation of the source shall not be included in the data averages. Records shall be retained for 5 years of the times and durations of all such periods and any other periods during process or control device operation when monitors are not operating.
  - (xi) It shall also be acceptable to demonstrate that the monitored parameter is within the range stated in the operating plan for an applicable averaging period by retaining records of all valid measured values obtained during the averaging period where each valid measured value is within the range. For example, when a 24 hour block average is required, compliance may be assured by showing that all valid measurements taken at 15 minute intervals during a 24 hour period are within the applicable range as stated in the operating plan for the parameter. In these cases, it is not mandatory that an average be calculated
  - (xii) The number of excused excursions for each monitored parameter for each semi-annual reporting period is shown below:

**When Measured Values are Averaged:**

Each semi-annual period	Two excused excursions
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**When Measured Values are Not Averaged:**

Each semi-annual period	1% of discrete readings
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A monitored parameter found outside its established range during startup, shutdown, or malfunction conditions or during periods of nonoperation of the source or lack of monitoring data during start-up,

shutdown, or malfunction conditions or during periods of nonoperation of the source do not count toward the number of excused excursions.

- (3) **Tank Monitoring:** The permittee must develop and obtain the approval of the Technical Secretary of an Operating Plan for demonstrating compliance with annual emission limits for a group of storage/process vessels. Table Notes from "Parametric Monitoring" above also apply to Operating Plans that employ continuous parametric monitoring systems (CPMS) for tanks. Tanks that have potential VOC emissions less than 5 tons per year qualify for meeting the monitoring and related recordkeeping and reporting requirements of subpart 1200-03-09-.02(11)(e)1.(iii) and the compliance requirements of subpart 1200-03-09-.02(11)(e)3.(i) by certification of compliance pursuant to part 1200-03-09-.04(5)(c).

(e) **General Requirements for Quarterly, Semiannual, and Annual Periodic Monitoring**

Except as specifically indicated otherwise within this permit (or by an applicable requirement referenced within this permit), the following requirements shall apply to periodic monitoring, recordkeeping, or testing.

- (a) Quarterly monitoring shall be completed at least once during each calendar quarter (January 1 through March 31 of each calendar year, April 1 through June 30 of each calendar year, July 1 through September 30 of each calendar year, and October 1 through December 31 of each calendar year).
- (b) Semiannual monitoring shall be completed at least once during each calendar semiannual period corresponding to the semi-annual reporting periods specified in Condition E2-1(a) of the current Title V Operating Permit for this facility.
- (c) Annual monitoring shall be completed at least once per each 12 month period corresponding to the annual reporting period specified in Condition E2-1(b) of the current Title V Operating Permit for this facility.
- (d) Periodic monitoring may be delayed for equipment that is out of service for an extended period, as follows:
- (1) For quarterly periodic monitoring, if equipment is out of service for at least 45 consecutive days during the calendar quarter, periodic monitoring must be completed within 90 operating days of the previous monitoring event.
- (2) For semiannual periodic monitoring, if equipment is out of service for at least 90 consecutive days during the calendar semiannual period, periodic monitoring must be completed within 180 operating days of the previous monitoring event.
- (3) For annual periodic monitoring, if equipment is out of service for at least 180 consecutive days during the calendar year, periodic monitoring must be completed within 365 operating days of the previous monitoring event.

**END OF PERMIT NUMBER 965715P**

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**ATTACHMENT 1**

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**OPACITY MATRIX DECISION TREE for  
VISIBLE EMISSION EVALUATION METHOD 9**

**Dated September 12, 2005**

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### Decision Tree PM for Opacity for Sources Utilizing EPA Method 9\*

#### Notes:

PM = Periodic Monitoring required by 1200-3-9-.02(11)(e)(iii).

This Decision Tree outlines the criteria by which major sources can meet the periodic monitoring and testing requirements of Title V for demonstrating compliance with the visible emission standards in paragraph 1200-3-5-.01. It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly referred to as Enhanced Monitoring – Proposed 40 CFR 64).

Examine each emission unit using this Decision Tree to determine the PM required.\*

Use of continuous emission monitoring systems eliminates the need to do any additional periodic monitoring.

Visible Emission Evaluations (VEEs) are to be conducted utilizing EPA Method 9. The observer must be properly certified to conduct valid evaluations.

#### Typical Pollutants

Particulates, VOC, CO, SO<sub>2</sub>, NO<sub>x</sub>, HCl, HF, HBr, Ammonia, and Methane.

Initial observations are to be repeated within 90 days of startup of a modified source, if a new construction permit is issued for modification of the source.

A VEE conducted by TAPCD personnel after the Title V permit is issued will also constitute an initial reading.

#### Reader Error

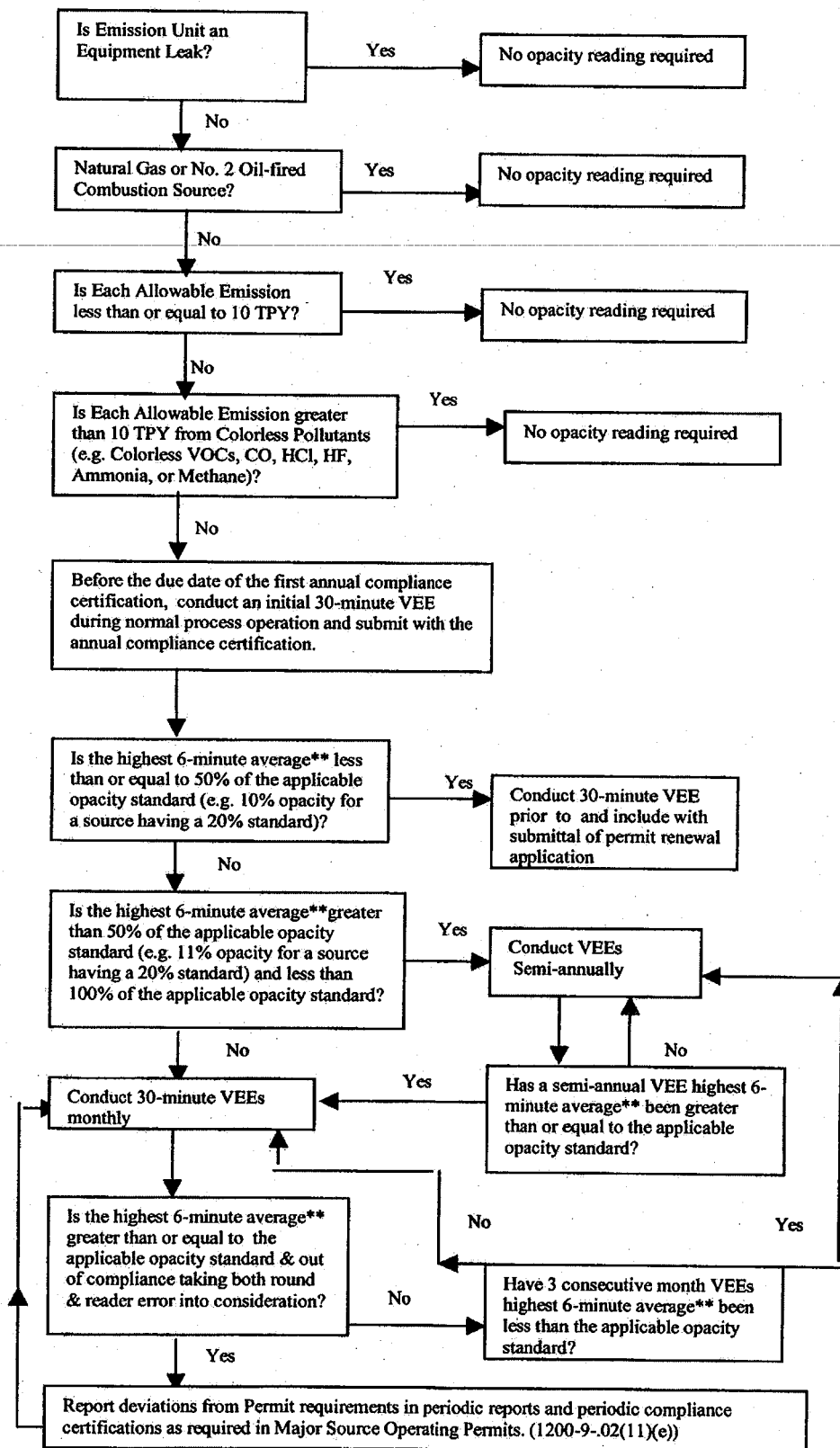
EPA Method 9, Non-NSPS or NESHAPS stipulated opacity standards: The TAPCD guidance is to declare non-compliance when the highest six-minute average\*\* exceeds the standard plus 6.8% opacity (e.g. 26.8% for a 20% standard).

EPA Method 9, NSPS or NESHAPS stipulate opacity standards: EPA guidance is to allow only engineering round. No allowance for reader error is given.

\*Not applicable to Asbestos manufacturing subject to 40 CFR 61.142

\*\*Or second highest six-minute average, if the source has an exemption period stipulated in either the regulations or in the permit.

Dated June 18, 1996  
Amended September 12, 2005



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**ATTACHMENT 2**

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**SPECIFIC APPLICABILITY DETERMINATIONS for**

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**40 CFR 63 (MACT) to MSOP-21**

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**40 CFR Part 63 Subpart FFFF**  
**Specific Applicability Determinations**  
**MSOP-21, PES B-244-1**

Identification	Category	Rule Citation
<b>Continuous Process Vents</b>		
	Group 1 Continuous Process Vent and Applicable Monitoring	§63.2455
	Continuous Process vent combined with Group 1 batch vent before control or recovery device	§63.2455(b)(1)
Vent A	Existing Group 2 Process with TRE >5	§63.2455(b)(2)
	New Group 2 Continuous Process Vents with TRE >8	§63.2455(b)(2)
	Existing Group 2 Continuous Process Vents requiring monitoring (vents using a recovery device to maintain 1.9 < TRE ≤ 5).	§63.2455(c)(1)
	New Group 2 Continuous Process Vents with 5 < TRE ≤ 8 before recovery devices.	§63.2455(c)(1)
	Gaseous streams routed to a Fuel Gas System are not process vents and have no applicable requirements under 40 CFR 63 Subpart FFFF.	§63.2550
<b>Process Vents Emitting Hydrogen Halide or Halogen HAPs</b>		
	Process with collective sum of hydrogen halide and hydrogen HAPs < 1,000 lb/year	§63.2465(b), §63.1257(d)(2)(i)
	Process with collective sum of hydrogen halide and hydrogen HAPs ≥ 1,000 lb/year	§63.2465(c), §63.994
	New process vents that emit HAP metals	§63.2465(d)
<b>Batch Process Vents</b>		
	Group 1 process vents and applicable monitoring	§63.2460
	Group 2 process vents	§63.2460, §63.2525(e)
	Process with non-reactive HAP usage < 10,000 lb/year	§63.2460(b)(7)
	Halogenated Group 1 batch process vents for which a combustion device is used to control organic HAP emissions	§63.2460
<b>Storage Vessels</b>		
	Group 1 storage vessels (storage, surge control, and bottoms receivers) storing a liquid for which the maximum true vapor pressure of organic HAPs > 76.6 kPa (527.9 psi)	§63.2470, §63.2450(r), §63.982
	Group 1 storage vessels (storage, surge control, and bottoms receivers) storing a liquid for which the maximum true vapor pressure of organic HAPs < 76.6 kPa (527.9 psi)	§63.2470, §63.2450(r), Subpart WW
Tanks 21 and 22 (Vent E)	Group 2 Storage Vessels (storage, surge control, and bottoms receivers)	§63.2470, §63.2450(r)
	Halogenated Group 1 vessels (storage, surge control, and bottoms receivers) for which a combustion device is used to control organic HAP emissions.	§63.2470
<b>Transfer Operations</b>		
	Group 1 transfer racks and applicable monitoring and testing	§63.2475
	Group 2 transfer rack	
	Halogenated Group 1 transfer racks for which a combustion device is used to control organic HAP emissions	§63.2475
<b>Equipment Leaks</b>		
	Equipment in OHAP service complying with 40 CFR 63 Subpart H, or equipment in OHAP service complying with 40 CFR 63 Subpart UU.	§63.2480(a)
	Equipment in OHAP service complying with 40 CFR 63 Subpart F.	§63.2480(a)
<b>Process Wastewater</b>		
	Group 1 wastewater stream	§§63.2485(c) and (n), §§63.132-148
Hexagon WA (vacuum seal pot associated with Vent A)	Group 2 wastewater stream	§63.2485
	Standards for waste management units managing Group 1 wastewater stream or residuals removed from Group 1 streams	§63.2485(d)
	Liquid streams in open systems	§63.2485(l), §63.149
<b>Emissions Averaging</b>		
	Comply with the emissions averaging plan for selected emission points	§63.2500, §63.150
<b>General Provisions</b>		
MON subject points as applicable	Applicability of General Provisions	§63.2540 and Table 12 of Subpart FFFF
<b>Recordkeeping and Reporting</b>		
MON subject points as applicable	Recordkeeping and reporting applicable MON emission points	§63.2520, §63.2525

**New Source Performance Standards – 40 CFR 60  
Specific Applicability Determinations  
MSOP-21, PES B-244-1**

Identification	Category	Rule Citation
<b>Subpart Kb – Storage Vessels</b>		
	Storage Vessels storing a VOL having a maximum true vapor pressure less than 76.7 kPa and must meet standards.	§60.112b(a)
	Storage Vessels storing a VOL having a maximum true vapor pressure equal to or greater than 76.7 kPa and must meet standards.	§60.112b(b)
	Storage Vessels that are not required to meet standards.	§60.110b
Kb subject points as applicable	Monitoring, recordkeeping, and reporting	§§60.115b, 60.116b
<b>Subpart VVa – Equipment Leaks</b>		
	Work practice standards for pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, etc.	§§60.482a, 60.483a
	Alternative monitoring for equipment in ethylene glycol vapor service (letter from Winston A. Smith, EPA Region 4, to Robert L. Barnes, October 2, 2001)	§60.13(i)
	Alternative monitoring for equipment in acetic acid service (letter from Beverly Banister, EPA Region 4 to Barry Stephens, TDAPC, January 23, 2004).	§60.13(i)
Portion of Flow Diagram Point G in acetic acid and/or acetic anhydride service. **	Alternative monitoring for equipment in acetic anhydride service (letter from Beverly Banister, EPA Region 4 to Barry Stephens, TDAPC, March 30, 2005, and letter from Carol Kemker, EPA Region 4, to Barry Stephens, TDAPC, July 1, 2010).	
Portion of Flow Diagram Point G in diketene service. ***	Alternative monitoring for equipment in acetic anhydride service (letter from Beverly Banister, EPA Region 4 to Barry Stephens, TDAPC, July 1, 2008, and letter from Carol Kemker, EPA Region 4, to Barry Stephens, TDAPC, July 1, 2010).	§60.13(i)
VVa subject points as applicable	Recordkeeping and reporting	§§60.486a, 60.487a
<b>Subpart DDD – Polymer Manufacturing</b>		
	PET using a DMT process, Material Recovery Section	§60.562-1(c)(1)(i)
	PET using a DMT process, Polymerization Reaction Section	§60.562-1(c)(1)(ii)
	PET using a TPA process, Raw Materials Preparation Section	§60.562-1(c)(2)(i)
	PET using a TPA process, Polymerization Reaction Section	§60.562-1(c)(2)(ii)
DDD subject points as applicable	Monitoring, recordkeeping, and reporting	§60.563, 60.565
<b>Subpart III – Air Oxidation</b>		
	TRE less than or equal to 1.0 (Reduce TOC by 98% or to 20 ppmv)	§60.612(a)
	TRE less than or equal to 1.0 (Combust in a flare)	§60.612(b)
	TRE greater than 1.0 but less than or equal to 4.0	§60.612(c)
	TRE greater than 4.0	§60.610(c)
III subject points as applicable	Monitoring, recordkeeping, and reporting	§§60.613, 60.615
<b>Subpart NNN – Distillation</b>		
	TRE less than or equal to 1.0 (Reduce TOC by 98% or to 20 ppmv)	§60.662(a)
	TRE less than or equal to 1.0 (Combust in a flare)	§60.662(b)
	TRE greater than 1.0 but less than or equal to 8.0	§60.662(c)
	TRE greater than 8.0	§60.660(c)(4)
	Low Flow Exemption	§60.660(c)(6)
	Design Capacity Exemption	§60.660(c)(5)
NNN subject points as applicable	Monitoring, recordkeeping, and reporting	§§60.663, 60.665
<b>Subpart RRR – Reactors</b>		
	TRE less than or equal to 1.0 (Reduce TOC by 98% or to 20 ppmv)	§60.702(a)
	TRE less than or equal to 1.0 (Combust in a flare)	§60.702(b)
	TRE greater than 1.0 but less than or equal to 8.0	§60.702(c)
	TRE greater than 8.0	§60.700(c)(2)
	Low Flow Exemption	§60.700(c)(4)
	Design Capacity Exemption	§60.700(c)(3)
	Low Concentration Exemption	§60.700(c)(8)
	Routed to distillation unit subject to subpart NNN except for a pressure relief valve	§60.700(c)(5)
RRR subject points as applicable	Monitoring, recordkeeping, and reporting	§§60.703, 60.705

\*\* See the Operating Plan in the application dated February 28, 2012, PES B-244-1, page 44, for specific monitoring requirements.

\*\*\* See the Operating Plan in the application dated February 28, 2012, PES B-244-1, page 45, for specific monitoring requirements.