INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
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(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

To:	Interested Parties
Date:	March 4, 2015
From:	Matthew Stuckey, Chief Permits Branch Office of Air Quality
Source Name:	Evonik Corporation Tippecanoe Laboratories
Permit Level:	Title V - Renewal
Permit Number:	157 - 33448 - 00006
Source Location:	1650 Lilly Road, Lafayette, Indiana
Type of Action Taken:	Permit Renewal

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the matter referenced above.

The final decision is available on the IDEM website at: http://www.in.gov/apps/idem/caats/
To view the document, select Search option 3, then enter permit 33448.

If you would like to request a paper copy of the permit document, please contact IDEM's central file room:

Indiana Government Center North, Room 1201
100 North Senate Avenue, MC 50-07
Indianapolis, IN 46204
Phone: 1-800-451-6027 (ext. 4-0965)
Fax (317) 232-8659

Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

(continues on next page)

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-6-1(b) or IC 13-15-6-1(a) require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204.

For an **initial Title V Operating Permit**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **thirty (30)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(b).

For a **Title V Operating Permit renewal**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **fifteen (15)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(a).

The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);

(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or

(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;

(2) the interest of the person making the request;

(3) identification of any persons represented by the person making the request;

(4) the reasons, with particularity, for the request;

(5) the issues, with particularity, proposed for considerations at any hearing; and

(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

Pursuant to 326 IAC 2-7-18(d), any person may petition the U.S. EPA to object to the issuance of an initial Title V operating permit, permit renewal, or modification within sixty (60) days of the end of the forty-five (45) day EPA review period. Such an objection must be based only on issues that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impractible to raise such issues, or if the grounds for such objection arose after the comment period.

To petition the U.S. EPA to object to the issuance of a Title V operating permit, contact:

U.S. Environmental Protection Agency
401 M Street
Washington, D.C. 20406

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
Decision-Title V Operating 4/8/14

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Commissioner

Prevention of Significant Deterioration (PSD) Flexible Permit And Part 70 Operating Permit Renewal OFFICE OF AIR QUALITY

Evonik Corporation Tippecanoe Laboratories
1650 Lilly Road
Lafayette, Indiana 47909

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T157-33448-00006	
Issued by: Matthew Stuckey, Branch Chief Permits Branch Office of Air Quality	Effective Date: April 1, 2015 Expiration Date: April 1, 2020

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D.11. BCM and BCM SUPPORT OPERATIONS - WASTE CONTAINER OPERATION CONDITIONS

D.12. T49 LIQUID WASTE INCINERATOR, INCLUDING ASSOCIATED AIR POLLUTION CONTROL EQUIPMENT AND CONTINUOUS MONITORING SYSTEMS OPERATION CONDITIONS

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(14)][326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary pharmaceutical, custom chemical, and animal health manufacturing plant.

Source Address:	1650 Lilly Road, Lafayette, Indiana 47909
General Source Phone Number:	765-477-4300
SIC Code:	2833, 2834, 2879, and 2869
County Location:	Tippecanoe
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program Major Source, under PSD Rules Major Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]

This stationary source consists of the following emission units and pollution control devices:

(a) D.1 Utilities and Utilities Support Operations: The utilities operations consists of four natural gas boilers with distillate fuel oil backup supplied by one fuel oil tank. The boilers provide steam to process operations in bulk pharmaceutical manufacturing and fermented products. The utility support facilities include the lime system for the potable water system (T9/T23) and glycol tanks for heating and cooling of BCM tanks and chillers. The detailed equipment list is located in Section D.1 of this permit.

(b) D.2 Engine Operations: The engine operations consist of the emergency reciprocating internal combustion engines at the facility. These engines consist of generators and compressors. The detailed equipment list is located in Section D.2 of this permit.

(c) D.3 Fermented Products - Fermentation Operations: The fermentation processes include the dry material storage area (T46), the raw material prep area (T1), the fermentation production areas (T2, T2A and T2C) and product storage area (T63). The detailed equipment list is located in Section D.3 of this permit.

(d) D.4 Fermented Products - Purification Operations: The whole broth products from fermentation are stored in Building T63 and then continuously fed to the purification equipment as capacity allows. The purification department consists of extraction and elution processes (T3), solvent recovery (T4), raw and recovered material storage (T147), and product storage (T39). The detailed equipment list is located in Section D.4 of this permit.

(e) D.5 Fermented Products - Support Operations: The support operations for the Fermented Products (FP) area consist of the FP wastewater treatment plant and FP wastewater sludge storage operations. The detailed equipment list is located in Section D.5 of this permit.

(f) D.6 Bulk Chemical Manufacturing (BCM) - Process Operations: The emission units in the BCM production operations can be generally described as process vessels (tanks), crystallizers, filters, centrifuges, dryers, process scrubber systems, and process condenser systems and are referred to as process vents. The detailed equipment list is located in Section D.6 of this permit.

(g) D.7 BCMBCM Support Operations - Solvent Recovery Operations: The BCM solvent recovery emission units can be generally described as columns, stills, evaporators, accumulators, and receivers and are referred to as process vents. The detailed equipment list is located in Section D.7 of this permit.

(h) D.8 BCM and BCM Support Operations - Individual Drain Systems (IDSs): The BCM IDSs consist of stationary systems used to convey waste streams to a waste management unit. Segregated stormwater sewer systems, designed and operated for the sole purpose of collecting rainfall-runoff at a facility, and segregated from all other IDSs, are excluded from this definition. The detailed equipment list is located in Section D.8 of this permit.

(i) D.9 BCM and BCM Support Operations – Solvent Storage Tank Operations: The BCM solvent storage tanks are defined as any vessel designed to store raw material feedstocks or used solvent to be recovered that contain VOCs and/or VOHAP. Pressure vessels greater than 204.9 kPa without emissions to the atmosphere, vessels attached to motor vehicles, or vessels used to store beverage alcohol are not BCM solvent storage tanks. The detailed equipment list is located in Section D.9 of this permit.

(j) D.10 BCM and BCM Support Operations – Waste Storage Tank Operations: The BCM waste storage tanks are defined as any waste management unit designed to contain an accumulation of waste material containing VOCs and/or VOHAP. Pressure vessels greater than 204.9 kPa without emissions to the atmosphere or vessels attached to motor vehicles are not BCM waste storage tanks. The detailed equipment list is located in Section D.10 of this permit.

(k) D.11 BCM and BCM Support Operations - Waste Containers: Waste containers are segregated into small and large containers. A small BCM waste container, such as a drum, contains VOC and/or VOHAP with a capacity greater than 26.4 gallons and equal to or less than 110.5 gallons. A large BCM waste container, such as a tanker truck, contains VOC and/or VOHAP with a capacity greater than 110.5 gallons. Identification of these types of containers have not been individually listed given they are portable and continually change.

(l) D.12 T49 Liquid Waste Incinerator: The T49 liquid waste incinerator provides treatment of on-site and limited off-site hazardous and non-hazardous waste, including high Btu liquids (primary waste) and low Btu liquids (secondary waste). The T49 incinerator consists of a primary combustion chamber followed by a wet quench system, a condenser/absorber, a particulate matter scrubber, and a stack with continuous emissions monitoring. The detailed equipment list is located in Section D.12 of this permit.

(m) D.13 T149 Solid-Liquid Waste Incinerator: The T149 solid-liquid waste incinerator provides treatment of on-site and limited off-site hazardous and non-hazardous waste, including containerized waste (hazardous and non-hazardous), high Btu liquids (primary waste) and low Btu liquids (secondary waste).
The T149 solid-liquid waste incinerator consists of a rotary kiln and vertical up-fired secondary combustion chamber (SCC), a wet ash handling system, a NO_x abatement system, a wet quench system, a condenser/absorber, a particulate matter scrubber, an induced draft (ID) fan, and a stack with continuous emissions monitoring. The detailed

equipment list is located in Section D.13 of this permit.

(n) D.14 BCM Control Systems – RTO Operations: The regenerative thermal oxidizer (RTO) system consists of a closed-vent system that transports fume streams exhausted from the BCM manufacturing and support operations to the RTOs. The RTOs, designed to thermally destruct the VOC and/or VOHAP laden fume streams from the process and support operations, are also equipped with caustic scrubbing systems to control hydrogen halide and halogen emissions. The detailed equipment list is located in Section D.14 of this permit.

(o) D.15 BCM Control Systems – T79 Fume Incinerator System Operations: The T79 fume incinerator system consists of a closed-vent system that transports fume streams exhausted from the BCM manufacturing and support operations to the T79 incinerator. The T79 incinerator, designed to thermally destruct the VOC and/or VOHAP laden fume streams from the process and support operations, are also equipped with caustic scrubbing systems to control hydrogen halide and halogen emissions. The detailed equipment list is located in Section D.15 of this permit.

(p) D.16 T171 Research and Development and Pharmaceutical Manufacturing Operations Conditions: The emission units in the T171 production operations can be generally described as process vessels (tanks), slurry mills, dryers and filter presses used primarily for pharmaceutical research and development. Minimal commercial production may occur in T171. The detailed equipment list is located in Section D.16 of this permit.

(q) D.18 Chemical Wastewater Treatment Plant: The wastewater generated from the BCM operations is collected in wastewater holding tanks, transferred through a clarification process, followed by the biological treatment facility. The detailed equipment list is located in Section D.18 of this permit.

(r) D.19 Transfer of Affected Wastewater of Offsite Treatment: Facilities for the shipment of wastewater generated onsite to an offsite treatment facility and facilities for the receipt of offsite wastewater to be treated onsite.

(s) D.20 BCM and BCM Support Operations – Transfer Rack Operations: Transfer racks are used to load material into tanker trucks at T146 and T19. The detailed equipment list is located in Section D.20 of this permit..

(t) D.21 Degreaser Operations: The degreasing operations at the facility consist of cold cleaning organic solvent degreasing operations that do not exceed 145 gallons of solvent usage per 12 months. The requirements for these degreasing operations are included in Section D.21 of this permit.

(u) D.22 Architectural and Industrial Maintenance (AIM) Coatings Operations: AIM coating operations may occur throughout the facility. The requirements for AIM coatings are included in Section D.22 of this permit.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

(a) This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

(1) D.3 Fermented Products - Fermentation Operations: Various mixers, bump tanks and fermenter tanks in the fermentation operations each emitting less than 5 pounds PM10 per hour or 25 pounds PM10 per day. [326 IAC 6-3]

(2) D.6 BCM Production Operations: Heat exchange systems in the BCM operating areas are classified as insignificant activities under the closed loop heating and cooling system clause pursuant to 326 IAC 2-7-1(21)(FF) and 40 CFR 63.1252(c).

(3) D.8 BCM and BCM Support Operations - Individual Drain Systems (IDSs): Individual drain systems (sumps) in the BCM operating areas each emitting less than less than 3 pounds VOC per hour or 15 pounds VOC per day. [40 CFR 63.1256(e), 40 CFR 63.689(b), and 326 IAC 2-2]

(4) D.10 BCM and BCM Support Operations – Waste Storage Tank Operations: Various BCM waste tanks and knock out pots in the BCM operating areas each emitting less than 3 pounds VOC per hour or 15 pounds VOC per day. [40 CFR 63.1256(b), 40 CFR 63.685, 40 CFR 60.110b, 326 IAC 2-2, and 326 IAC 8-5-3]

(5) D.11 BCM and BCM Support Operations – Waste Containers: Small and large waste containers in the BCM operating areas each emitting less than less than 3 pounds VOC per hour or 15 pounds VOC per day. [40 CFR 63.1256(d), 40 CFR 63.688, 326 IAC 2-2]

(6) D.16 T171 Research and Development and Pharmaceutical Manufacturing Operations: The T171 equipment components from process piping systems, including pumps, valves, and piping connections [flanges] are classified as insignificant activities under the research and development facility clause pursuant to 326 IAC 2-7-1(21)(E). [40 CFR 63.1255 and 40 CFR 61, Subpart V]

(7) D.21 Degreaser Operation Conditions: This section provides specific requirements for cold cleaning organic solvent degreasing operations constructed after January 1, 1990 at the site which are defined as insignificant activities pursuant to 326 IAC 2-7-1(21)(G)(vi)(CC).

(b) This stationary source consists of the following types of insignificant activities, as defined in 326 IAC 2-7-1(21) that do not have applicable requirements:

(1) Natural gas-fired combustion sources with heat input equal to or less than 10 MMBtu per hour;

(2) Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than 6 MMBtu per hour;

(3) Reserved;

(4) A gasoline fuel transfer and dispensing operation handling less than or equal to 1300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons;

(5) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to 10,500 gallons, and dispensing less than or equal to 230,000 gallons per month;

(6) VOC/HAP storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons;

(7) VOC/HAP vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;

(8) Refractory storage not requiring air pollution control equipment;

(9) Machining where an aqueous cutting coolant continuously floods the machining interface;

(10) Degreasing operations that do not exceed 145 gallons of solvent usage per 12 months, except if subject to 326 IAC 20-6;

(11) Cleaners and solvents having a vapor pressure equal to or less than 2kPa measured at 38°C or having a vapor pressure equal to or less than 0.7kPa measured at 20°C and not exceeding a combined usage rate of 145 gallons per 12 months;

(12) Closed loop heating and cooling systems;

(13) Structural or fabrication cutting 200,000 linear feet or less of one inch plate or equivalent or using 80 tons or less of welding consumables;

(14) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to 1% by volume;

(15) Activities associated with the transportation and treatment of sanitary sewage, provided discharge to the treatment plant is under the control of the owner/operator, that is, an on-site sewage treatment facility;

(16) Any operation using aqueous solutions containing less than 1% by weight of VOCs excluding HAPs;

(17) Forced and induced draft noncontact cooling tower systems not regulated under a NESHAP;

(18) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;

(19) Heat exchanger cleaning and repair;

(20) Process vessel degassing and cleaning to prepare for internal repairs;

(21) Stockpiled soils from soil remediation activities that are covered and waiting transport for disposal;

(22) Paved and unpaved roads and parking lots with public access[326 IAC 4-4];

(23) Asbestos abatement projects regulated by 326 IAC 14-10;

(24) Purging of gas lines and vessels that is related to routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process;

(25) Equipment used to collect any material that might be released during a malfunction, process upset, or spill cleanup, including catch tanks, temporary liquid separators, tanks and fluid handling equipment;

(26) Blowdown from sight glasses; boilers; compressors; pumps; and cooling towers;

(27) On-site fire and emergency response training approved by the department;

(28) Reserved;

(29) Reserved;

(30) Reserved;

(31) Reserved;

(32) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including deburring, buffing, polishing, abrasive blasting, pneumatic conveying, and woodworking operations;[326 IAC 6-3-2]

(33) Purge double block and bleed valves;

(34) Filter or coalescer media changeout;

(35) Vents from ash transport systems not operated at positive pressures;

(36) A laboratory as defined in 326 IAC 2-7-1(21)(G);

(37) Research and development facility as defined in 326 AIC 2-7-1(21)(H);

(38) Other activities below insignificant threshold levels:

   (A) Portable cleaning and collection tanks less than 3 pounds VOC per hour or 15 pounds VOC per day;[326 IAC 6-3-2]

   (B) T4 sulfuric acid tank less than 5 pounds PM10 per hour or 25 pounds PM10 per day;[326 IAC 6-3-2]

   (C) T47 trash transfer less than 5 pounds PM10 per hour or 25 pounds PM10 per day; [326 IAC 6-3-2]

   (D) Sump tanks less than 3 pounds VOC per hour or 15 pounds VOC per day;

   (E) T116 hydrochloric acid tank less than 5 pounds single HAP per day or 1 ton single HAP per year;

   (F) T14 Ranney Well less than 5 pounds single HAP per day or 1 ton single HAP per year;

   (G) T99 ethylene glycol expansion tanks/system less than 12.5 pounds combined HAP per day or 2.5 tons combined HAP per year;

   (H) T100 MACE tanks/system less than 12.5 pounds per day or 2.5 tons combined HAP per year;

   (I) T100 Unit 1 drumming operations less than 5 pounds PM10 per hour or 25 pounds PM10 per day;

   (J) T99/T100 solids particle sizing equipment (mills and delumpers) less than 5 pounds PM10 per hour or 25 pounds PM10 per day; and

(K) Various fermentation and purification operations less than 3 pounds VOC per hour or 15 pounds VOC per day, less than 12.5 pounds per day or 2.5 tons combined HAP per year; and less than 5 pounds PM10 per hour or 25 pounds PM10 per day. [See Section D.3 and D.4]

(39) T39 research and development activities defined in 326 IAC 2-7-1(21)(H).

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-7-5(2)][326 IAC 2-1.1-9.5][326 IAC 2-7-4(a)(1)(D)][IC 13-15-3-6(a)]

(a) This permit, T157-26575-00006, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-7-7]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-7-5(5)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by a "responsible official" as defined by 326 IAC 2-7-1(34). Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a "responsible official" of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) A "responsible official" is defined at 326 IAC 2-7-1(34).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(12)][326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall maintain Preventive Maintenance Plans (PMPs) including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

(b) The Permittee shall implement the PMPs, including any required record keeping, as necessary to ensure that failure to implement a PMP does not cause or contribute to an exceedance of any limitation on emissions or potential to emit

(c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

(d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(8) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

(h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.12 Permit Shield [326 IAC 2-7-15][326 IAC 2-7-20][326 IAC 2-7-12]

(a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

(b) In addition to the nonapplicability determination set forth in Section D of this permit, the IDEM, OAQ has made the following determination regarding this source.

(1) **40 CFR 60, Subpart Cb - Emission Guidelines and Compliance Times for Large Municipal Waste Combustors That are Constructed On or Before September 20, 1994:** This rule does not apply because the waste incinerators have a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart as provided in 40 CFR 60.32b(g).

(2) **40 CFR 60, Subpart Ce - Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators:** This rule does not apply because the waste incinerators have a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart as provided in 40 CFR 60.32e(d).

(3) **40 CFR 60, Subpart D – Fossil-fuel fired steam generating units:** This source is not subject to 40 CFR Part 60, Subpart D because none of the boilers at the plant site exceed 250 MMBtu/hr in heat input capacity. [40 CFR 60.40(a)(1)]

(4) **40 CFR 60, Subpart Db – Standard of Performance for Industrial-Commercial-Institutional Steam Generating Units:** Boiler 4 is not subject to 40 CFR Part 60 Subpart Db because, although it has a maximum heat input capacity of greater than 100 MMBtu/hr, it did not commence construction and was not reconstructed or modified after June 19, 1984. Boiler 5 has a capacity less than 100 MMBtu/hr, so it is also not subject to 40 CFR Part 60 Subpart Db.

(5) **40 CFR 60, Subpart Dc – Standard of Performance for Industrial-Commercial-Institutional steam generating units:** Boiler 5 is not subject to 40 CFR Part 60 Subpart Dc because, although it has a maximum heat input capacity between 10 and 100 MMBtu/hr, it was not constructed, reconstructed, or modified after June 9, 1989. Boilers 4, 4001, and 4002 do not have capacities between 10 and 100 MMBtu/hr, so they are also not subject to 40 CFR Part 60 Subpart Dc as provided in 40 CFR 60.40c(a).

(6) **40 CFR 60, Subpart E – Standard of Performance for Incinerators:** This rule does not apply because the T49 incinerator does not have the capability to combust solid wastes, and the T149 incinerator does not combust solid waste as defined in 60.51(b).

(7) **40 CFR 60, Subpart Ea – Standard of Performance for Municipal Waste Combustors for which Construction Commenced After December 20, 1989 and On or Before September 20, 1994:** This rule does not apply because the waste incinerators have a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart as provided in 40 CFR 60.50a(i).

(8) **40 CFR 60, Subpart Eb – Standard of Performance for large Municipal Waste Combustors for which Construction Commenced After December 20, 1994 or for which Modification or reconstruction is Commenced After June 19, 1996:** This rule does not apply because the waste incinerators have a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart as provided in 40 CFR 60.50b(h).

(9) **40 CFR 60, Subpart Ec – Standard of Performance for Hospital/Medical/Infectious waste incinerators for which Construction is Commenced After June 20, 1996 and Standard of Performance for Commercial and Industrial solid waste incineration units for which Construction is Commenced After November 30, 1999 or for which modification or reconstruction is commenced on or after June 1, 2001:** This source is not subject to 40 CFR Part 60 Subpart Ec because the combustors at the site are required to have a permit pursuant to Section 3005 of the Solid Waste Disposal Act as provided in 40 CFR 60.50c(d).

(10) **40 CFR Part 60, Subpart VV – Equipment Leaks of VOC in Synthetic Organic Chemical Manufacturing Industry:** This source is not subject to 40 CFR Part 60 Subpart VV because it was not an affected synthetic organic chemical manufacturing industry facility after January 5, 1981 and on or before November 7, 2006.

(11) **40 CFR Part 60, Subpart III – VOC Emissions from Synthetic Organic Chemical Manufacturing Industry Oxidation Unit Processes:** This source is not subject to 40 CFR Part 60, Subpart III because the source does not have any air oxidation reactors.

(12) **40 CFR Part 60, Subpart NNN – VOC Emissions from Synthetic Organic Chemical Manufacturing Industry Distillation Operations:** This source is not subject to 40 CFR Part 60, Subpart NNN because the distillation units at Evonik are designed and operated as batch operations.

(13) **40 CFR Part 60, Subpart RRR – VOC Emissions from Synthetic Organic Chemical Manufacturing Industry Reactor Processes:** This source is not subject to 40 CFR Part 60, Subpart RRR because the reactor processes at Evonik are designed and operated as batch operations.

(14) **40 CFR 60, Subpart K – Storage Vessels for Petroleum Liquids**: This source is not subject to 40 CFR Part 60, Subpart K because none of the storage tanks at the source constructed between June 11, 1973 and May 19, 1978 store petroleum liquids, as defined in 40 CFR 60.111.

(15) **40 CFR 60, Subpart Ka – Storage Vessels for Petroleum Liquids**: This source is not subject to 40 CFR Part 60, Subpart K because none of the storage tanks at the source constructed between May 19, 1978 and July 23, 1984 store petroleum liquids, as defined in 40 CFR 60.111.

(16) **40 CFR 60, Subpart AAAA – Small Municipal Waste Combustion Units**: This source is not subject to 40 CFR Part 60, Subpart AAAA because the incinerators at the source are hazardous waste combustion units that are subject to a permit for under section 3005 of the Solid Waste Disposal Act, as provided in 40 CFR 60.1020(e).

(17) **40 CFR 60, Subpart BBBB – Small Municipal Waste Combustion Units**: This source is not subject to 40 CFR Part 60, Subpart BBBB because the incinerators at the source are hazardous waste combustion units that are subject to a permit for under section 3005 of the Solid Waste Disposal Act, as provided in 40 CFR 60.1555(e).

(18) **40 CFR 60, Subpart CCCC – Commercial and Industrial Solid Waste Incinerators**: This source is not subject to 40 CFR Part 60, Subpart CCCC because the incinerators at the source are hazardous waste combustion units that are subject to requirements under 40 CFR 63, Subpart EEE, as provided in 40 CFR 60.2020(g).

(19) **40 CFR 60, Subpart DDDD – Commercial and Industrial Solid Waste Incinerators**: This source is not subject to 40 CFR Part 60, Subpart DDDD because the incinerators at the source are hazardous waste combustion units that are subject to requirements under 40 CFR 63, Subpart EEE, as provided in 40 CFR 60.2555(g).

(20) **40 CFR 60, Subpart EEEE – Other Solid Waste Incinerators**: This source is not subject to 40 CFR Part 60, Subpart EEEE because the incinerators at the source are hazardous waste combustion units that are subject to requirements under 40 CFR 63, Subpart EEE, as provided in 40 CFR 60.2887(e).

(21) **40 CFR 60, Subpart FFFF – Other Solid Waste Incinerators**: This source is not subject to 40 CFR Part 60, Subpart FFFF because the incinerators at the source are hazardous waste combustion units that are subject to requirements under 40 CFR 63, Subpart EEE, as provided in 40 CFR 60.2993(e).

(22) **40 CFR 60, Subpart JJJJ - Stationary Spark Ignition Internal Combustion Engines:** None of the spark ignition engines at the source (all of which are <500 HP) are subject to 40 CFR Part 60 Subpart JJJJ because construction of the engines did not commence after 6/12/2006.

(23) **40 CFR 60, Appendix B, Performance Specification 16 - Predictive Emission Monitoring System:** This rule does not apply because the source does not operate any predictive emission monitoring systems (PEMS).

(24) **40 CFR 61, Subpart C – National Emission Standard for Beryllium:** This source is not subject to 40 CFR Part 61, Subpart C and 326 IAC 14-3 because the incinerators at the source do not incinerate beryllium containing waste. [40 CFR 61.30(a) and 40 CFR 61.31(g)]

(25) **40 CFR 61, Subpart E – National Emission Standard for Mercury:** This source is not subject to 40 CFR Part 61, Subpart E and 326 IAC 14-5, which applies to, among other things, incinerators burning wastewater treatment plant sludge because the source does not incinerate wastewater treatment plant sludge in its incinerators.

(26) **40 CFR 61, Subpart FF – National Emission Standard for Benzene Waste Operations:** This source is subject to 40 CFR Part 61, Subpart FF but does not handle more than 10 megagrams of benzene waste per year. Therefore, the emission control requirements of 40 CFR Part 61, Subpart FF do not apply to the source.

(27) **40 CFR 63, Subpart B Sections 63.50 through 63.56 – Section 112(j)**: This source is not subject to 40 CFR Part 63, Sections 63.50 through 63.56 because there are no affected sources within a source category or subcategory for which USEPA has failed to promulgate emission standards by the section 112(j) deadlines.

(28) **40 CFR 63, Subpart O – Ethylene Oxide Sterilizers:** This source is not subject to 40 CFR Part 63, Subpart O and 326 IAC 20-5 because the source does not utilize ethylene oxide in sterilization operations. [40 CFR 63.360]

(29) **40 CFR 63, Subpart Q – Industrial Process Cooling Towers:** This source is not subject to 40 CFR Part 63, Subpart Q and 326 IAC 20-4 because the source does not utilize chromium based water treatment compounds in its cooling towers. [40 CFR 63.400]

(30) **40 CFR 63, Subpart T – Halogenated Solvent Cleaning:** This source is not subject to 40 CFR Part 63, Subpart T and 326 IAC 20-6 because the source does not use halogenated solvents in any solvent cleaning machines. [40 CFR 63.460]

(31) **40 CFR 63, Subpart YY – Generic MACT categories:** This source is not subject to 40 CFR Part 63, Subpart YY and 326 IAC 20-44 because the source is not one of the source categories described in 40 CFR 63.1103. [40 CFR 63.1100]

(32) **40 CFR 63, Subpart MMM – Pesticide Active Ingredient Production:** This source is not subject to 40 CFR Part 63, Subpart MMM and 326 IAC 20-45 because the source does not contain any pesticide active ingredient process units or associated equipment as described in 40 CFR 63.1360. [40 CFR 63.1360]

(33) **40 CFR 63, Subpart EEEE** – **Organic Liquid Distribution:** This source has emission units that are affected sources under 40 CFR Part 63, Subpart EEEE, but the emission units do not exceed the thresholds requiring emission controls. Therefore, the requirements of 40 CFR 63, Subpart EEEE do not apply to the source.

(34) **40 CFR 63, Subpart GGGGG – Site Remediation:** This source is not subject to 40 CFR Part 63, Subpart GGGGG because the site remediation activities at Evonik Corporation are being performed under a RCRA corrective action program at a treatment, storage and disposal facility.

(35) **326 IAC 4-2 –Incinerators**: This source is not subject to 326 IAC 4-2, Incinerators, because the incinerators at the source are hazardous waste combustion units that are subject to requirements under 40 CFR 63, Subpart EEE, as provided in 326 IAC 4-2-1(b)(2)(F).

(36) **326 IAC 6-5 – Fugitive Particulate Matter Emission Limitations:** This source does not have potential fugitive dust emissions greater than 25 tons per year, and is therefore, not subject to the requirements of this rule.

(37) **326 IAC 8-4 – Petroleum Sources:** This source does not operate any facilities subject to the requirements of 326 IAC 8-4. 326 IAC 8-4-6 is not applicable to this source because the source does not accept deliveries of gasoline by transports, as defined by 326 IAC 1-2-84.

(38) **326 IAC 8-6 – Organic Solvent Emissions Limitations**: The provisions of 326 IAC 8-6 are not applicable to this source because the source is subject to other rules in 326 IAC 8.

(39) **326 IAC 9-1 –Carbon Monoxide Emission Limits**: This source is not subject to 326 IAC 9-1, Carbon Monoxide Emission Limits, because the incinerators at the source are hazardous waste combustion units that are subject to requirements under 40 CFR 63, Subpart EEE, as provided in 326 IAC 9-1-1(b)(5).

(40) **326 IAC 10 – Nitrogen Oxide Rules: This source** does not contain any emission units identified in 326 IAC 10-4. Therefore, the source is not subject to the NOx emission control requirements of that rule.

(41) **326 IAC 11 – Emission Limitations for Specific Types of Operations:** This source does not contain any emission units described in 326 IAC 11. Therefore, the source is not subject to the requirements of those rules.

(42) **326 IAC 15 – Lead Rules:** This source does not contain any emission units described in 326 IAC 15. Therefore, the source is not subject to the requirements of those rules.

(43) **326 IAC 21 – Acid Deposition:** This source does not contain any emission units described in 326 IAC 21. Therefore, the source is not subject to the requirements of those rules.

(c) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

(d) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

(e) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:

(1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;

(2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and

(4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(f) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

(g) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]

(h) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]

(a) All terms and conditions of permits established prior to T157-26575-00006 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised under 326 IAC 2-7-10.5, or

(3) deleted under 326 IAC 2-7-10.5.

(b) Provided that all terms and conditions are accurately reflected in this permit, all previous registrations and permits are superseded by this Part 70 operating permit.

B.14 Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source’s existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)] [326 IAC 2-7-8(a)][326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require the certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.16 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Administration and Support Section (PASS), Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12] [40 CFR 72]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Administration and Support Section (PASS), Office of Air Quality
100 North Senate Avenue

MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application shall be certified by a "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

(d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

B.18 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)] [326 IAC 2-7-12(b)(2)]

(a) No Part 70 permit revision shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.19 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b) or (c), without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permits Administration and Support Section (PASS), Office of Air Quality 100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region 5
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-7-20(b) or (c). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-7-20(b)(1), and (c)(1).

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

(1) A brief description of the change within the source;

(2) The date on which the change will occur;

(3) Any change in emissions; and

(4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require the certification by a “responsible official” as defined by 326 IAC 2-7-1(34).

(c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.

(e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.20 Source Modification Requirement [326 IAC 2-7-10.5]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.21 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee’s right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.22 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permits Administration and Support Section (PASS), Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The application which shall be submitted by the Permittee does require the certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.24 Advanced Source Modification Approval [326 IAC 2-7-5(15)] [326 IAC 2-7-10.5]

(a) The requirements to obtain a source modification approval under 326 IAC 2-7-10.5 or a permit modification under 326 IAC 2-7-12 are satisfied by this permit for the proposed emission units, control equipment or insignificant activities in Sections A.2 and A.3.

(b) Pursuant to 326 IAC 2-1.1-9 any permit authorizing construction may be revoked if construction of the emission unit has not commenced within eighteen (18) months from the date of issuance of the permit, or if during the construction, work is suspended for a continuous period of one (1) year or more.

B.25 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-7-5(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any manufacturing process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.4 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.5 Pharmaceutical MACT Annual Mass Limit Process Vent Standard [40 CFR 63.1254(a)(2)]

The sum of all process vents within processes complying with the Pharmaceutical MACT annual mass emissions limit shall not exceed an annual mass limit of 1800 kg HAP per 365-day period pursuant to 40 CFR 63.1254(a)(2)(ii).

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted. The provisions of 326 IAC 1-7-1(3), 326 IAC 1-7-2, 326 IAC 1-7-3(c) and (d), 326 IAC 1-7-4, and 326 IAC 1-7-5(a), (b), and (d) are not federally enforceable.

C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

The Permittee shall comply with the applicable requirements of 326 IAC 14-10, 326 IAC 18, and 40 CFR 61.140.

The requirement in 326 IAC 14-10-1(a) that the owner or operator shall use an Indiana Accredited

Asbestos Inspector and all the requirements in 326 IAC 18 related to licensing requirements for asbestos inspectors are not federally enforceable.

Testing Requirements [326 IAC 2-7-6(1)]

C.8 Performance Testing [326 IAC 3-6]

(a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

(c) Except as otherwise provided in this permit, pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements 4[326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)]

C.10 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

(a) This section applies to the operation and maintenance of equipment and devices specified in Section D of this permit to determine or monitor compliance, except that it does not apply to continuous emissions monitoring systems or continuous opacity monitoring systems described in Section D. Section C.11 (Maintenance of Continuous Emission Monitoring Equipment) establishes the general operation and maintenance requirements for continuous emission monitoring systems and continuous opacity monitoring systems.

(b) Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

(c) Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

(d) The Permittee shall keep records of monitoring system operation that include the following:

(1) All maintenance logs, calibration checks, and other required quality assurance activities.

(2) All records of corrective and preventive action.

(3) A log of monitoring system downtime, including the following:

(A) Date of monitoring system downtime.

(B) Time of commencement and completion of each downtime.

(C) Reason for each downtime.

(e) The Permittee shall submit a report of monitoring system downtime as specified in Section D. The report shall include the following:

(1) Date of monitoring system downtime.

(2) Time of commencement.

(3) Duration of each downtime.

(4) Reasons for each downtime.

(5) Nature of system repairs and adjustments.

(f) Except where permit conditions streamline similar applicable requirements pursuant to 326 IAC 2-7-24, nothing in this permit nor in 326 IAC 3-5 supersedes the monitoring provisions in 40 CFR Part 60 or 40 CFR Part 63.

(g) Instrument Specification;

(1) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.

(2) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

C.11 Maintenance of Continuous Emission Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)] [326 IAC 2-1.1-11] [326 IAC 3-5]

(a) Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification, which shall be submitted by the Permittee, does require the certification by a “responsible official” as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall install, calibrate, maintain, and operate all necessary continuous emission monitoring systems (CEMS) and related equipment in accordance with applicable federal regulations and 326 IAC 3-5.

(c) This provision applies only to CEMS operated solely for monitoring compliance with BACT limitations. The CEMS shall be operated at all times as specified in Section D, except during CEMS malfunctions, reasonable periods of necessary CEMS calibration or CEMS maintenance activities. CEMS calibration and maintenance activities shall be properly documented and shall be conducted pursuant to the standard operating procedures under 326 IAC 3-5-4(a).

(d) The Permittee shall keep records in accordance with 326 IAC 3-5-6(b) that includes the following:

(1) All documentation relating to:

(A) design, installation, and testing of all elements of the monitoring system; and

(B) required corrective action or compliance plan activities.

(2) All maintenance logs, calibration checks, and other required quality assurance activities.

(3) All records of corrective and preventive action.

(4) A log of plant operations, including the following:

(A) Date of facility downtime.

(B) Time of commencement and completion of each downtime.

(C) Reason for each downtime.

(e) In accordance with 326 IAC 3-5-7(5), the Permittee shall submit reports of continuous monitoring system instrument downtime, except for zero (0) and span checks, which shall be reported separately. The reports shall include the following:

(1) Date of downtime.

(2) Time of commencement.

(3) Duration of each downtime.

(4) Reasons for each downtime.

(5) Nature of system repairs and adjustments.

(f) Except where permit conditions streamline similar applicable requirements pursuant to 326 IAC 2-7-24, nothing in this permit nor in 326 IAC 3-5 supersedes the monitoring provisions in 40 CFR Part 60 or 40 CFR Part 63.

(g) The Permittee shall prepare and submit to IDEM, OAQ a written report of the results of calibration gas audits for each calendar quarter within thirty (30) calendar days after the end of each quarter and a written report of the results of relative accuracy test audits (RATA) within forty-five (45) calendar days after completion of the RATA. The reports must contain the information required by 326 IAC 3-5-5(f)(2). 326 IAC 3-5-5(f)(2) is not federally enforceable.

Corrective Actions and Response Steps [326 IAC 2-7-5][326 IAC 2-7-6]

C.12 Emergency Reduction Plan [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee prepared and submitted to the commissioner a revised written emergency reduction plan (ERP) consistent with safe operating procedures on August 25, 2011.

(b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.13 Risk Management Plan [326 IAC 2-7-5(11)] [40 CFR Part 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.14 Response to Abnormal or Out-of-Range Compliance Monitoring Measurements [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) Upon detecting a measurement required by a compliance monitoring condition in a D Section of this permit that is outside the normal or usual range of values for the monitoring parameter, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

(b) The response shall include minimizing the period of any startup, shutdown, or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of abnormal or out-of-range monitoring values (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(c) A determination of whether the Permittee has used acceptable procedures in response to a measurement indicating abnormal or out-of-range monitoring values will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records; and/or

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall maintain records of corrective actions taken.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5][326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.16 Emission Statement [326 IAC 2-7-5(3)(C)(iii)] [326 IAC 2-7-5(7)] [326 IAC 2-7-19(c)] [326 IAC 2-6]

(a) Pursuant to 326 IAC 2-6-3(a)(1), the Permittee shall submit by July 1 of each year an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

(1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);

(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1 (32) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement does require the certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

C.17 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2] [326 IAC 2-3]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

(c) If there is a reasonable possibility that a "project" (as defined in 326 IAC 2-2-1 (qq)) at an existing emissions unit, other than projects at a source with Plant-wide Applicability Limitation (PAL)), which is not part of a "major modification" (as defined in 326 IAC 2-2-1 (ee)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1 (rr)), the Permittee shall comply with following:

(1) construction of the "project" (as defined in 326 IAC 2-2-1 (qq) at an existing emissions unit, document and maintain the following records:

(A) A description of the project.

(B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.

(C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:

(i) Baseline actual emissions;

(ii) Projected actual emissions;

(iii) Amount of emissions excluded under section 326 IAC 2-2-1(rr)(2)(A)(iii); and

(iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.

(2) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and

(3) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.18 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [326 IAC 2-2]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

(e) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

(f) If the Permittee is required to comply with the recordkeeping provisions of (d) in Section C - General Record Keeping Requirements for any "project" (as defined in 326 IAC 2-2-1 (qq) and/or 326 IAC 2-3-1 (ll)) at an existing emissions unit, and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ:

(1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C- General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (xx) and/or 326 IAC 2-3-1 (qq), for that regulated NSR pollutant, and

(2) The emissions differ from the preconstruction projection as documented and maintained under Section C - General Record Keeping Requirements (c)(1)(C)(ii).

(g) The report for project at an existing emissions unit shall be submitted within sixty (60) days after the end of the year and contain the following:

(1) The name, address, and telephone number of the major stationary source.

(2) The annual emissions calculated in accordance with (d)(1) and (2) in Section C - General Record Keeping Requirements.

(3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) and/or 326 IAC 2-3-2(c)(3).

(4) Any other information that the Permittee deems fit to include in this report.

Reports required in this part shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(h) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C- General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.

Stratospheric Ozone Protection

C.19 Compliance with 40 CFR 82 and 326 IAC 22-1

The Permittee shall comply with all the applicable provisions of 40 CFR Part 82, wherever applicable to activities at the source.

SECTION D.1 UTILITIES AND UTILITIES SUPPORT OPERATION CONDITIONS

Emissions Unit Description: [326 IAC 2-7-5(14)]:

(a) The following emission units are subject to applicable requirements described in this D section:

Emission* Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
Building T6:					
BLR004	Natural Gas/Fuel Oil Boiler	S-T6-BLR004	142	MMBtu/hr	None
BLR005	Natural Gas/Fuel Oil Boiler	S-T6-BLR005	97	MMBtu/hr	None
Building T26:					
BLR4001	Natural Gas/Fuel Oil Boiler 4001	S-T26-BLR4001	156.1	MMBtu/hr	None
BLR4002	Natural Gas/Fuel Oil Boiler 4002	S-T26-BLR4002	156.1	MMBtu/hr	None

* In this permit, boilers BLR004, BLR005, BLR006 and BLR007 are referred to as Boilers 4 and 5, 4001 and 4002, respectively.

(b) The following emission units are not subject to applicable requirements described in this D section and are listed only for informational purposes:

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
Outside Building T6:					
OILTK001*	Fuel Oil Storage Tank	PV-T6-OILTK001	250,000	gallons	None
T97/T98*	Glycol System	N/A	45,000	gallon	None
T9/T23*	Lime Storage Silo	N/A	79.5	lb/hr	None

* Emission units marked with a single asterisk are insignificant activities as defined in 326 IAC 2-7-1(21). Specifically, the fuel oil storage tank is an insignificant activity pursuant to 326 IAC 2-7-1(21)

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.0 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to Boilers 4001 and 4002 described in this section except when otherwise specified in 40 CFR Part 60, Subpart Db.

D.1.1 Particulate Matter (PM) Limitations [326 IAC 2-7-24, 326 IAC 6-2-3, 326 IAC 6-2-4, 326 IAC 20-1 and PC (79) 1510 Issued March 22, 1982 (Revised by this permit)] and PSD Minor Limitations for PM and PM10 [326 IAC 2-2]

(a) Pursuant to 326 IAC 6-2-3(c) (Particulate Matter Emission Limitations for Sources of Indirect Heating), particulate emissions from Boiler 4 shall not exceed 0.39 pounds per MMBtu heat input.

(b) Pursuant to 326 IAC 6-2-3(c) (Particulate Matter Emission Limitations for Sources of Indirect Heating), particulate emissions from Boiler 5 shall not exceed 0.31 pounds per

MMBtu heat input.

(c) Pursuant to 326 IAC 6-2-4(a), the PM emission rate from each of Boilers 4001 and 4002 shall not exceed 0.19 pounds per MMBtu heat input.

(d) The amount of very low sulfur oil with a maximum sulfur content of 0.3%, burned in each of Boilers 4001 and 4002 shall be less than 976,740 gallons per twelve consecutive month period with compliance determined at the end of each month.

Compliance with the fuel oil consumption limit will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

D.1.2 Sulfur Dioxide (SO_2) Limitations [326 IAC 7-1.1-2, 326 IAC 2-7-24, 326 IAC 12, PC (79) 1510 Issued March 22, 1982 (Revised by this permit), 40 CFR 60.41b, 40 CFR 60.42b(k)]

(a) Pursuant to 326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations), the SO_2 emissions from Boiler 4 shall be limited to 0.5 pounds per MMBtu heat input, when burning No. 2 fuel oil. Pursuant to 326 IAC 7-2-1, compliance with this standard is based on a calendar month average. This emission limit correlates to a maximum fuel oil sulfur content of 0.49 percent by weight.

(b) Pursuant to 326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations), the SO_2 emissions from Boiler 5 shall not exceed 0.5 pounds per MMBtu heat input, when burning No. 2 fuel oil. This emission limit correlates to a maximum fuel oil sulfur content of 0.49 percent by weight.

(c) Pursuant to 326 IAC 7-1.1 (SO_2 Emission Limitations), 326 IAC 12, and 40 CFR 60, Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units):

(1) The SO_2 emission rate from Boilers 4001 and 4002 shall not exceed 0.32 pounds per million Btu heat input; or

(2) The fuel oil shall contain no more than 0.3 weight percent sulfur.

(3) If the Permittee burns either natural gas or very low sulfur oil, the Permittee shall be in compliance with Conditions D.1.2(c)(1) and (2).

(d) Pursuant to 40 CFR 60 Subpart Db, the fuel oil sulfur content or sulfur dioxide emission limit applies at all times, including periods of startup, shutdown, and malfunction.

D.1.3 Nitrogen Oxides (NOx) Limitations [326 IAC 12, 40 CFR 60.44b]

Pursuant to 40 CFR 60.44b(a), the NOx emission rate from Boilers 4001 and 4002 shall not exceed 0.2 lb per MMBtu per boiler. The NOx emission limit shall be based on a 30-day rolling average. The NOx emission limit applies at all times, including periods of startup, shutdown, and malfunction.

D.1.4 Opacity Limitations [326 IAC 2-7-24, 326 IAC 12, 326 IAC 5-1, 40 CFR 60.43b]

(a) Pursuant to 326 IAC 5-1 (Opacity Limitations), the following conditions apply to Boilers 4, 5, 4001, and 4002 as an alternative to the opacity limitations in Section C – Opacity, when starting up or shutting down a boiler, opacity may exceed the applicable limit in Condition C.2. However, opacity levels shall not exceed sixty percent (60%) for any six (6) minute averaging period. Opacity in excess of the applicable limit established in 326 IAC 5-1-2 shall not continue for more than two (2) six (6)-minute averaging periods in any twenty-four (24) hour period.

(b) Pursuant to 40 CFR 60.43b(h)(5), because Boilers 4001 and 4002 will burn only very low sulfur oil or natural gas, the boilers are not subject to opacity limitations in 40 CFR 60.43b(f) and (g).

D.1.5 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for the emission units described in this Section. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this section.

D.1.6 PSD Minor Limitations for CO [326 IAC 2-2]

The total carbon monoxide emissions from Boilers 4001 and 4002 shall be less than 98 tons per twelve consecutive month period with the compliance determined at the end of each month. Compliance with the CO emission limit of Boilers 4001 and 4002, and the hours of operation of the T26-COMP-5600A emergency air compressor in Section D.2 will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to this modification.

D.1.7 General Provisions Relating to NESHAP DDDDD [326 IAC 20-1, 40 CFR Part 63 Subpart A]

Pursuant to 40 CFR 63.7565, the Permittee shall comply with the providsions of 40 CFR Part 63 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, as specified in Table 10 of 40 CFR Part 63 Subpart DDDDD, and in accordance with the schedule in 40 CFR Part 63 Subpart DDDDD.

D.1.8 NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters [326 IAC 20-95, 40 CFR Part 63 Subpart DDDDD]

The Permittee shall comply with the following provisions of 40 CFR Part 63 Subpart DDDDD (included as Attachment A of this permit), which are incorporated by reference as 326 IAC 20-95, for Boilers 4, 5, 4001, and 4002, except as otherwise specified in 40 CFR Part 63 Subpart DDDDD:

(1) 40 CFR 63.7480
(2) 40 CFR 63.7485
(3) 40 CFR 63.7490
(4) 40 CFR 63.7495
(5) 40 CFR 63.7499
(6) 40 CFR 63.7500
(7) 40 CFR 63.7501
(8) 40 CFR 63.7505
(9) 40 CFR 63.7510
(10) 40 CFR 63.7515
(11) 40 CFR 63.7520
(12) 40 CFR 63.7521
(13) 40 CFR 63.7522
(14) 40 CFR 63.7525
(15) 40 CFR 63.7530
(16) 40 CFR 63.7533
(17) 40 CFR 63.7535
(18) 40 CFR 63.7540
(19) 40 CFR 63.7541
(20) 40 CFR 63.7545
(21) 40 CFR 63.7550
(22) 40 CFR 63.7555
(23) 40 CFR 63.7560

(24) 40 CFR 63.7565
(25) 40 CFR 63.7575
(26) Tables 1 - 10

Testing and Monitoring Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-7-5(1)]

D.1.9 Testing Requirements [326 IAC 2-1.1-11, 326 IAC 2-7-6(1), 326 IAC2-7-6(6), 326 IAC 2-7-24, 326 IAC 3-6-3, 326 IAC 12, 40 CFR 60.8, 40 CFR 60.46b]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U.S. EPA. The requirements for conducting performance tests are described in Section C – Performance Testing.

D.1.10 Compliance Requirements for SO_2 [326 IAC 7-2] [40 CFR 60.45b(j)] [40 CFR 60.47b(f)] [326 IAC 12]

(a) The Permittee shall utilize one of the following methods for Boilers 4 and 5 when burning fuel oil:

(1) Provide vendor analysis of quantity, heat content and sulfur content of fuel delivered, if accompanied by a certification.

(2) Analyze the oil sample to determine the sulfur content of the oil via the procedures in 326 IAC 3-7-4.

(A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and

(B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.

(3) Conduct a stack test for sulfur dioxide emissions from the boiler, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, which is conducted with such frequency as to generate the amount of information required by (1) or (2) above. [326 IAC 7-2-1(d)]

(b) Boilers 4001 and 4002 are subject to the following requirements:

(1) The Permittee shall burn only natural gas or very low sulfur fuel oil.

(2) The Permittee shall demonstrate that the oil burned meets the definition of very low sulfur fuel oil by:

(A) Following the performance testing procedures as described in 40 CFR 60.45b(c) or 40 CFR 60.45b(d); or

(B) Maintaining fuel receipts as described in 40 CFR 60.49b(r).

Compliance monitoring is not required when burning very low sulfur fuel oil.

D.1.11 Continuous Emission Monitoring System (CEMS) Requirements [40 CFR 60.13] [40 CFR 60.48b] [326 IAC 2-1.1-11] [326 IAC 2-7-24] [326 IAC 3-5] [40 CFR 60.48b (e) (2)] [326 IAC 12]

(a) NOx CEMS Operation Requirements – The following requirements shall apply to Boilers 4001 and 4002 when burning natural gas and/or fuel oil:

(1) The Permittee shall install, calibrate, maintain, evaluate, and operate the NOx CEMS in accordance with the procedures in 40 CFR 60.13 and 40 CFR 60, Appendix F. Evonik Corporation received approval from the IDEM on January 30, 2007 to set the span value for the NOx CEMS at 1,000 ppm in lieu of 500 ppm.

(2) The CEMS shall be operational upon startup of the boilers.

(3) Continuous operation is defined as one data point every 15-minute period.

(4) The NOx emissions shall be calculated using stack flow data, or an appropriate F- Factor per 40 CFR 60 Appendix A, Method 19.

(5) The Standard Operating Procedure (SOP) shall include procedures to obtain emission data when nitrogen oxides emission data are not obtained because of continuous monitoring system breakdowns, repairs, calibration checks and zero and span adjustments. The emission data will be obtained by using standby monitoring systems, Method 7, Method 7A, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.

(6) The 1-hour average nitrogen oxides emission rates measured by the continuous nitrogen oxides monitor shall be expressed in lb/MMBTU heat input and shall be used to calculate the average emission rates under 40 CFR 60.44b. The 1-hour averages shall be calculated using the data points required under 40 CFR 60.13(h). At least four data points must be used to calculate each 1-hour average.

(b) CO CEMS Operation Requirements – The following requirements shall apply to Boilers 4001 and 4002 when burning natural gas and/or fuel oil:

(1) The Permittee shall install, operate, and maintain the CO CEMS according to the procedures in 40 CFR part 60, Appendix F and Performance Specification (PS) 4B of 40 CFR part 60, appendix B.

(2) The CEMS shall be installed and operational upon startup of the boilers.

(3) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period, regardless of startup, shutdown and malfunction. [326 IAC 2-1.1-11]

(5) Data recorded during periods of monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities, shall not be used to determine compliance. Any period for which the monitoring system is out of control and data are not available for required calculations constitute a deviation from the monitoring requirements. [326 IAC 2-1.1-11]

(c) CEMS Standard Operating Procedures (SOP) – The Permittee shall prepare and implement an SOP that provides step-by-step procedures and operations in accordance with 326 IAC 3-5-4(a). This includes preventive maintenance procedures and corrective actions that include those procedures taken to ensure continuous operation and to minimize malfunctions. The SOP must be submitted to IDEM within 90 days of installation of the monitors.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.12 Record Keeping Requirements

The Permittee shall maintain the following records:

(a) The records of the carbon monoxide emissions, in tons per month, from Boilers 4001 and 4002.

(b) The monthly records of the amount of very low sulfur oil burned in each Boilers 4001 and 4002.

(c) Receipts or test analysis for fuel oil burned in Boilers 4001 and 4002 certifying that the fuel oil is less than 0.3% sulfur content [40 CFR 60.42b(j), 40 CFR 60.49b(r)].

(d) Daily records of all fuel burned in Boilers 4001 and 4002 [40 CFR 60.49b(d).

(e) Annual capacity factor for fuel oil burned in Boilers 4001 and 4002 calculated monthly using a 12-month rolling average [40 CFR60.49b(d)].

(f) NOx Emissions data for each of Boilers 4001 and 4002 operating day:

  (1) Average hourly NOx emissions in lbs/MMBtu [40 CFR 60.49b(g)(2)];

  (2) Rolling 30-day average NOx emissions in lbs/MMBtu [40 CFR 60.49b(g)(3)];

  (3) Periods when the 30-day NOx average exceeds the limit in D.1.3 [40 CFR 60.49b(g)(4) and 40 CFR 60.49b(h)(4)];

  (4) Days when sufficient data was not obtained [40 CFR 60.49b(g)(5)];

  (5) Times and reasons for excluding data [40 CFR 60.49b(g)(6)];

  (6) Any F factors used to calculate NOx emissions, method of determination, and type of fuel combusted [40 CFR 60.49b(g)(7)];

  (7) Times when full span was exceeded [40 CFR 60.49b(g)(8)];

  (8) Description of any modifications to the CEMS that could affect the ability of the system to comply with Performance Standard 2 [40 CFR 60.49b(g)(9)]; and

  (9) Results of CEMS daily drift tests and quarterly accuracy assessments [40 CFR 60.49b(g)(10)].

(g) CO Emissions data for Boilers 4001 and 4002:

  (1) Each period during which a CEMS on Boilers 4001 and 4002 is malfunctioning or inoperative (including out-of-control periods) [326 IAC 2-1.1-11];

  (2) All required measurements needed to demonstrate compliance with the CO standard for Boilers 4001 and 4002 (including, but not limited to, 15-minute averages of CEMS data, raw performance testing measurements, and raw performance evaluation measurements, that support data that the source is required to report) [326 IAC 2-1.1-11];

  (3) All results of CEMS performance evaluations [326 IAC 2-1.1-11];

  (4) All measurements as may be necessary to determine the conditions of performance evaluations [326 IAC 2-1.1-11];

(5) All CMS calibration checks [326 IAC 2-1.1-11];

(6) All adjustments and maintenance performed on the CEMS [326 IAC 2-1.1-11];

(7) Previous (i.e., superseded) versions of the CEMS SOP as required in [326 IAC 2-1.1-11];

(8) Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period [326 IAC 2-1.1-11];

(9) The boiler emissions shall be computed using the data points required under condition D.1.10(b), appropriate F factors, and/or the emission factors in the paragraphs (i) and (ii):

(i) When burning natural gas: 84 lbs of CO/million cubic feet of gas burned or 12.9 lbs/hr; and

(ii) When burning fuel oil: 5 lbs of CO/thousand gallons of oil or 5.58 lbs/hr.

(h) The Permittee shall record the information described in item (a) through (d) below on a calendar month basis for Boiler 4, and Boiler 5:

(a) The amount (expressed in thousands of gallons (Mgal)) of No. 2 fuel oil burned in Boilers 4 and 5;

(b) The average sulfur content (expressed in percentage by weight) of the No. 2 fuel oil burned in Boilers 4 and 5;

(c) The average higher heating value (expressed in Btu per gallon) of the No. 2 fuel oil burned in Boilers 4 and 5; and

(d) The average sulfur dioxide emission rate (expressed in pounds per MMBtu) of the No. 2 fuel oil for Boilers 4 and 5.

D.1.13 Reporting Requirements

(a) Reserved.

(b) A quarterly summary of the information to document compliance with Conditions D.20.8 (a) and (b) shall be submitted to the IDEM, OAQ, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by a “responsible official” as defined by 326 IAC 2-7-1(34).

(c) A quarterly summary of the information to document compliance with Condition D.20.9, including a summary of the very low sulfur oil use report, shall be submitted to the IDEM, OAQ, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by a “responsible official” as defined by 326 IAC 2-7-1(34).

(d) The following information shall be reported quarterly:

(1) For Boilers 4001 and 4002, all NOx emission records described in D.1.11(f) [40 CFR 60.49b(i)].

(2) A statement that only very low sulfur fuel was burned in Boilers 4001 and 4002 [40 CFR 60.49b(r)].

(3) The total fuel used by Boilers No. 4001 and No. 4002 for each calendar month.

(4) Description of any CEMS downtime events, or a statement that there were none.

(e) The Permittee shall submit quarterly summary reports of the monthly fuel oil characteristic and consumption records required by Condition D.1.13 for Boilers 4 and 5.

(f) All reports shall be submitted in accordance with Section C – General Reporting Requirements, of this permit.

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.1.14 Modifications and Construction: Advance Approval of Permit Conditions Requirements

The emission units described in this D section are not subject to the advance approval permit conditions.

SECTION D.2 ENGINE OPERATION CONDITIONS

Emissions Unit Description: [326 IAC 2-7-5(14)]

(a) The following emissions units are subject to applicable requirements described in this D section as indicated in the table:

Engine ID	Engine Type[1]	Stack/ Vent	Nominal Capacity	UOM	Control Device	Construction Commenced	Date Manufactured	NSPS Subpart IIII	MACT Subpart ZZZZ
T5*	Emergency Diesel Generator	N/A	380	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source
T6*	Emergency Natural Gas Generator	N/A	60	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source
T26-GEN-7500A*	Emergency Diesel Generator	N/A	201	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source
T26-COMP 5600A*	Emergency Diesel Air Compressor	N/A	125	HP	None	Post-7/1/2005	Post 4/1/2006 and Pre-6/12/2006	Affected Source	Existing Affected Source
T62*	Emergency Diesel Air Compressor	N/A	300	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source
T62*	Emergency Diesel Generator	N/A	1,475	HP	None	Pre-7/11/2005	Pre-4/1/2006	Not Applicable	Exempt: 63.6590(b)(3)(iii)
T70*	Emergency Diesel Generator	N/A	402	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source
T121*	Emergency Diesel Generator	N/A	1,676	HP	None	Pre-12/31/2002	Pre-4/1/2006	Not Applicable	Existing Affected Source
T126 (Server Room)*	Emergency Diesel Generator	N/A	402	HP	None	Post-6/12/2006	Post-4/1/2006	Affected Source	New Affected Source
T135*	Emergency Diesel Generator	N/A	390	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source
T148*	Emergency Natural Gas Generator	N/A	134	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source

T149*	Emergency 4-Stroke Gasoline Engine	N/A	11	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source

* Emission units marked with a single asterisk are insignificant activities as defined in 326 IAC 2-7-1(21).

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.2.0 General Provisions Relating to NESHAP ZZZZ [326 IAC 20-1, 40 CFR Part 63 Subpart A]

Pursuant to 40 CFR 63.6665, the Permittee shall comply with the providsions of 40 CFR Part 63 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, as specified in Table 8 of 40 CFR Part 63 Subpart ZZZZ, and in accordance with the schedule in 40 CFR Part 63 Subpart ZZZZ.

D.2.1 National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [326 IAC20-82, 40 CFR Part 63, Subpart ZZZZ]

The Permittee shall comply with the following provisions of 40 CFR Part 63 Subpart ZZZZ (included as Attachment B of this permit), which are incorporated by reference as 326 IAC 20-85, for the engines in Section D.2 except as otherwise specified in 40 CFR Part 63 Subpart ZZZZ:

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585
(3) 40 CFR 63.6590
(4) 40 CFR 63.6595
(5) 40 CFR 63.6600
(6) 40 CFR 63.6601
(7) 40 CFR 63.6602
(8) 40 CFR 63.6603
(9) 40 CFR 63.6604
(10) 40 CFR 63.6605
(11) 40 CFR 63.6625
(12) 40 CFR 63.6630
(13) 40 CFR 63.6635
(14) 40 CFR 63.6640
(15) 40 CFR 63.6645
(16) 40 CFR 63.6650
(17) 40 CFR 63.6655
(18) 40 CFR 63.6660
(19) 40 CFR 63.6665
(20) 40 CFR 63.6670
(21) 40 CFR 63.6676
(22) Tables 1 - 8

D.2.2 General Provisions Relating to New Source Performance Standards [326 IAC 20-1, 40 CFR Part 60 Subpart A]

Pursuant to 40 CFR 60.4218, the Permittee shall comply with the providsions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, as specified in Table 8 of 40 CFR Part 60 Subpart IIII, and in accordance with the schedule in 40 CFR Part 60 Subpart IIII.

D.2.3 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR Part 60 Subpart IIII]

The Permittee shall comply with the following provisions of 40 CFR Part 60 Subpart IIII (included as Attachment C of this permit) for the T26-COMP-5600A and T126 (Server Room) engines except as otherwise specified in 40 CFR Part 60 Subpart IIII:

(1) 40 CFR 60.4200
(2) 40 CFR 60.4205
(3) 40 CFR 60.4206
(4) 40 CFR 60.4207
(5) 40 CFR 60.4211
(6) 40 CFR 60.4214
(7) 40 CFR 60.4218
(8) 40 CFR 60.4219
(9) Table 1
(10) Table 8

D.2.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is not required for the emission units described in this Section.

D.2.5 PSD Minor Limitations for CO [326 IAC 2-2]

The hours of operation of the T26-COMP-5600A emergency air compressor shall be limited to 500 hours per twelve (12) consecutive month period, with compliance determined at the end of each month.

Testing and Monitoring Requirements

D.2.6 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

No emissions testing is required for the emission units described in this Section, at this time, but IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. The requirements for conducting performance tests that may be required by IDEM in the future are described in Section C – Performance Testing.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.7 Record Keeping Requirements

The Permittee shall maintain records of the hours of operation of the T26-COMP-5600A emergency compressor.

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.2.8 Modifications and Construction: Advance Approval of Permit Conditions Requirements

The emission units described in this D section are not subject to the advance approval permit conditions.

SECTION D.3 FERMENTED PRODUCTS – FERMENTATION OPERATION CONDITIONS

Emissions Unit Description: [326 IAC 2-7-5(14)]
The information describing the processes contained in the following facility description boxes is descriptive information and does not constitute enforceable conditions:

(a) The following emissions units are subject to applicable requirements described in this D section:

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
Building T1 – Raw Material Prep Area:					
MIX001*	Dry Raw Material Mixer	PV-T1-T52348	N/A	N/A	Dust Collector T52348**
MIX002*	Dry Raw Material Mixer	PV-T1-T52348	N/A	N/A	
MCNV001	Conveyor of Raw Material Mixers	PV-T1-T52348	N/A	N/A	
Building T2 – Fermentation Production Area:					
TK001*	Bump Tank	S-T2-FERM	5,000	liters	Cyclone**
TK002*	Bump Tank	S-T2-FERM	5,000	liters	Cyclone**
TK003*	Bump Tank	S-T2-FERM	5,000	liters	Cyclone**
TK004*	Bump Tank	S-T2-FERM	5,000	liters	Cyclone**
TK011*	Bump Tank	S-T2-FERM	5,000	liters	Cyclone**
TK012*	Bump Tank	S-T2-FERM	5,000	liters	Cyclone**
TK014*	Bump Tank	S-T2-FERM	5,000	liters	Cyclone**
TK005*	Fermentor Tank	S-T2-FERM	60,000	liters	Cyclone T67457**
TK006*	Fermentor Tank	S-T2-FERM	60,000	liters	
TK007*	Fermentor Tank	S-T2-FERM	60,000	liters	
TK008*	Fermentor Tank	S-T2-FERM	60,000	liters	Cyclone T67458**
TK009*	Fermentor Tank	S-T2-FERM	60,000	liters	
TK010*	Fermentor Tank	S-T2-FERM	60,000	liters	
TK015*	Fermentor Tank	S-T2-FERM	60,000	liters	Cyclone T67462**
TK016*	Fermentor Tank	S-T2-FERM	60,000	liters	Cyclone T67463**
TK017*	Fermentor Tank	S-T2-FERM	60,000	liters	Cyclone T67464**
TK018*	Fermentor Tank	S-T2-FERM	60,000	liters	Cyclone T65689**
TK019*	Fermentor Tank	S-T2-FERM	60,000	liters	Cyclone T52221**
TK020*	Fermentor Tank	S-T2-FERM	60,000	liters	Cyclone T52228**

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
Building T2A – Fermentation Production Area:					
TK021*	Bump Tank	S-T2-FERM	10,000	liters	Cyclone**
TK022*	Bump Tank	S-T2-FERM	10,000	liters	Cyclone**
TK023*	Bump Tank	S-T2-FERM	10,000	liters	Cyclone**
TK024*	Bump Tank	S-T2-FERM	10,000	liters	Cyclone**
TK025*	Fermentor Tank	S-T2-FERM	120,000	liters	Cyclone T86551**
TK026*	Fermentor Tank	S-T2-FERM	120,000	liters	Cyclone T86552**
TK027*	Fermentor Tank	S-T2-FERM	120,000	liters	Cyclone T86553**
TK028*	Fermentor Tank	S-T2-FERM	120,000	liters	Cyclone T67696**
TK029*	Fermentor Tank	S-T2-FERM	120,000	liters	Cyclone T67697**
TK030*	Fermentor Tank	S-T2-FERM	120,000	liters	Cyclone T67698**
Building T2C – Fermentation Production Area:					
TK043*	Bump Tank	S-T2-FERM	17,500	liters	Cyclone T65363**
TK044*	Bump Tank	S-T2-FERM	17,500	liters	Cyclone T65364**
TK048*	Fermentor Tank	S-T2-FERM	210,000	liters	Cyclone T65367**
TK049*	Fermentor Tank	S-T2-FERM	210,000	liters	Cyclone T65359**
TK050*	Fermentor Tank	S-T2-FERM	210,000	liters	Cyclone T65360**

* Emissions units marked with a single asterisk are insignificant activities as defined in 326 IAC 2-7-1(21)(A)-(C).
** All control devices are voluntary units and are not required to demonstrate compliance with any applicable regulations.

(b) The following emissions units are insignificant activities pursuant to 326 IAC 2-7-1(21)(A)-(C) and are not subject to applicable requirements described in this D section:

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
Building T46 – Material Storage Area:					
BIN001	Dry Raw Material Storage Bin	PV-T46-T67454	23,000	liters	Baghouse T67454**
BIN002	Dry Raw Material Storage Bin	PV-T46-T67454	23,000	liters	
BIN003	Dry Raw Material Storage Bin	PV-T46-T67454	23,000	liters	
BIN004	Dry Raw Material Storage Bin	PV-T46-T67454	23,000	liters	
BIN005	Dry Raw Material Storage Bin	PV-T46-T67455	23,000	liters	Baghouse

BIN006	Dry Raw Material Storage Bin	PV-T46-T67455	23,000	liters	T67455**
BIN007	Dry Raw Material Storage Bin	PV-T46-T67455	23,000	liters	
BIN008	Dry Raw Material Storage Bin	PV-T46-T67455	23,000	liters	
BIN009	Dry Raw Material Storage Bin	PV-T46-T67659	23,000	liters	Baghouse T67659**
BIN010	Dry Raw Material Storage Bin	PV-T46-T67659	23,000	liters	
BIN011	Dry Raw Material Storage Bin	PV-T46-T67456	23,000	liters	Baghouse T67456**
BIN012	Dry Raw Material Storage Bin	PV-T46-T67456	23,000	liters	
Building T1 – Raw Material Prep Area:					
BLO001	Railcar Pneumatic Conveyor	N/A	N/A	liters	None
DISSC001	Dispensing Scale	PV-T1-T44984	N/A	liters	Dust Collector T44984**
TK121	Make Up Tank	PV-T1-314512	10,150	liters	Rotoclone 314512**
TK122	Make Up Tank	PV-T1-314512	10,150	liters	
TK123	Make Up Tank	PV-T1-314512	2,100	liters	
TK123A	Make Up Area Tank	N/A	380	liters	None
TK124	Make Up Tank	PV-T1-314512	2,100	liters	Rotoclone 314512**
TSLU	Slurry Tank	N/A	3,600	liters	None
SC001	Liquid Weigh Scale Tank	N/A	N/A	liters	None
Building T1 – Liquid Storage Area:					
TK232	Whole Broth Storage Tank	N/A	130,000	liters	None
TK233	Whole Broth Storage Tank	N/A	130,000	liters	None
TK234	Whole Broth Storage Tank	N/A	130,000	liters	None
TK235	Whole Broth Storage Tank	N/A	130,000	liters	None
TK236	Waste Holding Tank	N/A	130,000	liters	None
TK237	Liquid Storage Tank	N/A	130,000	liters	None
TK241	Liquid Storage Tank	N/A	100,000	liters	None
TK242	Liquid Storage Tank	N/A	100,000	liters	None
TK243	Liquid Storage Tank	N/A	100,000	liters	None
TK244	Liquid Storage Tank	N/A	100,000	liters	None
TK249	Liquid Storage Tank	N/A	45,300	liters	None

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
Building T1 - Filter Room::					
TK143	Slurry Tank	N/A	3,800	liters	None
TK144	Slurry Tank	N/A	3,800	liters	None
Building T63 – Fermentation Production Area:					

TK255	Filter Broth Storage Tank	N/A	94,700	liters	None

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 Non-Applicability Determination of Pharmaceutical MACT Standards [40 CFR 63, Subpart GGG]

The emission units associated with the fermentation operations are not subject to the requirements of 40 CFR 63, Subpart GGG (Pharmaceutical MACT Standards) because these emission units do not process, use, or produce hazardous air pollutant (HAP) emissions in excess of 50 ppmv pursuant to 40 CFR 63.1251 (Process Vent Definition).

D.3.2 Non-Applicability Determination of State VOC Emission Standards [326 IAC 8-5-3, 326 IAC 8-1-6]

(a) The emission units associated with the fermentation operations do not manufacture pharmaceutical products by chemical synthesis. Therefore, the emission units associated with the fermentation operations are not subject to the requirements of 326 IAC 8-5-3 (VOC Emission Limitations for Synthesized Pharmaceutical Manufacturing Operations).

(b) The emission units associated with the fermentation operations are not subject to the requirements of 326 IAC 8-1-6 (Best Available Control Technologies for VOC Emissions) because the VOC emissions associated with each facility are less than twenty-five (25) tons per year

D.3.3 Particulate Matter (PM) Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, Registration 157-3220 Issued September 3, 1993, Registration 157-4466 Issued May 8, 1995, and Registration 157-7144 Issued December 4, 1996, the emission units presented in the table below shall not exceed the following particulate matter emission rates based on the following maximum throughput rates:

Emission Unit Description	Emission Unit ID	Maximum Process Weight Rate (ton/hr)	Allowable PM Emission Rate (lb/hr)
Building T1 – Raw Material Prep Area:			
Dry Raw Material Mixers + Conveyor for Mixers	MIX001, MIX002, MCNV001	0.532	2.68, combined
Building T2 – Fermentation Production Area:			
Bump Tanks	TK001 – TK004	18.3	28.7, combined
Fermentor Tanks	TK005 – TK010		
Bump Tanks	TK011 – TK014		
Fermentor Tanks	TK015 – TK020		
Building T2A – Fermentation Production Area:			
Bump Tanks	TK021 – TK024	18.3	28.7, combined
Fermentor Tanks	TK025 – TK027, TK029 – TK030		
Fermentor Tank	TK028		
Building 2C – Fermentation Production Area:			
Bump Tanks	TK043 – TK044	31.6	5.5, combined

Fermentor Tanks	TK048 – TK050		

D.3.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is not required for any of the emission units or control devices described in this Section.

Testing and Monitoring Requirements [326 IAC 2-7-6(1) (6)] [326 IAC 2-7-5(1)]

D.3.5 Testing Requirements [326 IAC 2-7-6(1), (6)]

No emissions testing is required for the emission units described in this Section at this time, but IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. The requirements for conducting performance tests that may be required by IDEM in the future are described in Section C – Performance Testing.

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.3.6 Modifications and Construction: Advance Approval of Permit Conditions Requirements

The emission units described in this D section are not subject to the advance approval permit conditions.

SECTION D.4 FERMENTED PRODUCTS - PURIFICATION OPERATION CONDITIONS

Emissions Unit Description: [326 IAC 2-7-5(14)]

(a) The following emissions units are subject to applicable requirements described in this D section:

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
Building T3 – Purification Production Area:					
T3-RVD040	Rotary Vacuum Dryer	Vent	500	gallons	Dust Collector**
Building T147 – Storage Tank Module:					
T147-TK001	Storage Tank	Vent	19,000	gallons	Vent Condenser**
T147-TK002	Storage Tank	Vent	19,000	gallons	Vent Condenser**
T147-TK003	Storage Tank	Vent	19,000	gallons	Vent Condenser**
T147-TK004	Storage Tank	Vent	19,000	gallons	Vent Condenser**
T147-TK005	Storage Tank	Vent	19,000	gallons	Vent Condenser**
T147-TK006	Storage Tank	Vent	19,000	gallons	Vent Condenser**
T147-TK007	Storage Tank	Vent	19,000	gallons	Vent Condenser**
T147-TK008	Storage Tank	Vent	19,000	gallons	Vent Condenser**
T147-TK009	Waste Storage Tank	Vent	19,000	gallons	Vent Condenser**
T147-TK010	Storage Tank	Vent	19,000	gallons	Vent Condenser**
T147-TK011	Storage Tank	Vent	19,000	gallons	Vent Condenser**
T147-TK012	Storage Tank	Vent	19,000	gallons	Vent Condenser**

** All control devices are voluntary units and are not required to demonstrate compliance with any applicable regulations.

(b) The following emission units are not subject to applicable requirements described in this D section:

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
Building T3 – Purification Production Area:					
T3-CENT001*	Stacked Plate Centrifuge	Vent	20	gallons	None
T3-CENT002*	Stacked Plate Centrifuge	Vent	20	gallons	None
T3-CENT003*	Stacked Plate Centrifuge	Vent	20	gallons	None
T3-COL001*	East Carbon Column	Vent	200	gallons	None
T3-TK261*	Process Tank	Vent	500	gallons	None
T3-TK303*	Process Tank	Vent	2,000	gallons	None
T3-TK322*	Sulfuric Acid Holding Tank	Vent	1,000	gallons	None
T3-TK327-1T*	Process Tank	Vent	500	gallons	None

	T3-TK330*	Process Tank	Vent	4,000	gallons	None	
	T3-TK332-1T*	Process Tank	Vent	3,000	gallons	None	
	T3-TK332-2T*	Process Tank	Vent	3,000	gallons	None	
	T3-TK332-3T*	Process Tank	Vent	3,000	gallons	None	
	T3-TK334*	Process Tank	Vent	275	gallons	None	
	T3-TK336-1T*	Process Tank	Vent	1,500	gallons	None	
	T3-TK337-1T*	Process Tank	Vent	500	gallons	None	
	T3-TK338-1T*	Process Tank	Vent	500	gallons	None	
	T3-TK338-2T*	Process Tank	Vent	500	gallons	None	
	T3-TK338-3T*	Process Tank	Vent	500	gallons	None	
	T3-TK341-1T*	Process Tank	Vent	500	gallons	None	
	T3-TK346-1T*	Process Tank	Vent	500	gallons	None	
	T3-TK353-1T*	Process Tank	Vent	1000	gallons	None	
	T3-TK355-1T*	Process Tank	Vent	1000	gallons	None	
	T3-TK357-1T*	Process Tank	Vent	1000	gallons	None	
	T3-TK376-1T*	Process Tank	Vent	2000	gallons	None	
	T3-TK376-2T*	Process Tank	Vent	2000	gallons	None	
	T3-TK376-3T*	Process Tank	Vent	2000	gallons	None	
	T3-TK391*	Process Tank	Vent	2,000	gallons	None	
	T3-TK392-1T*	Process Tank	Vent	2,000	gallons	None	
	T3-TK393-1T*	Process Tank	Vent	2,000	gallons	None	
	T3-TK394*	Chemical Waste Tank	Vent	2000	gallons	None	
	T3-TK399*	Acid Wash Tank	Vent	500	gallons	None	
	T3-TK410*	20% Caustic Tank	Vent	500	gallons	None	
	T3-EVAP300*	Swenson Evaporator	Vent	400	gallons	None	
	T3-EVAP305	Evaporator	Vent	800	gallons	None	
	T3-COL002*	West Carbon Column	Vent	200	gallons	None	
	T3A014*	Storage Tank	Vent	600	gallons	None	
	T3A051*	Storage Tank	Vent	600	gallons	None	
	T3A86-1T*	CIP Tank	Vent	500	gallons	None	
	Building T4 – Solvent Recovery:						
	T4-COL001	Distilling Column	Vent	269	cf	None	
	T4*	Tylosin System	Vent	N/A	N/A	None	
	T4-TK101*	Process Tank	Condenser	25000	gallons	Vent Condenser**	
	Building T39 – Product Storage:						
	T39-TK10*	CIP Storage Tank	Vent	300	gallons	None	
	T39-TK11*	CIP Storage Tank	Vent	300	gallons	None	
	T39-TK021*	Storage Tank	Vent	2000	gallons	None	

T39-TK022*	Storage Tank	Vent	2000	gallons	None
T39-TK023*	Storage Tank	Vent	2000	gallons	None
T39-TK030*	Storage Tank	Vent	5000	gallons	None
T39-TK031*	Storage Tank	Vent	5000	gallons	None
T39-TK032*	Storage Tank	Vent	5,000	gallons	None
T39-TK033*	Storage Tank	Vent	5,000	gallons	None
T39-TK036*	Storage Tank	Vent	5000	gallons	None
Outside Storage Tanks:					
TK434-1T*	Sulfuric Acid Tank	Scrubber Vent	15000	gallons	None

* Emission units marked with an asterisk are insignificant activities as defined by 326 IAC 2-7-1(21)(A)-(C).
** Control devices marked with a double asterisk are voluntary control units and are not required to demonstrate compliance with any regulations.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.4.1 Non-Applicability Determination of Pharmaceutical MACT Standards [40 CFR 63, Subpart GGG]

Except for the T3 rotary vacuum dryer when it is used to dry pharmaceutical product with process vents subject to the 40 CFR 63, Subpart GGG (Pharmaceutical MACT Standards), the emission units associated with the purification operations are not subject to the requirements of 40 CFR 63, Subpart GGG (Pharmaceutical MACT Standards) because these emission units do not process, use, or produce hazardous air pollutant (HAP) emissions in excess of 50 ppmv pursuant to 40 CFR 63.1251 (Process Vent Definition).

D.4.2 Non-Applicability Determination of State VOC Emission Standards [326 IAC 8-5-3, Registration Issued November 8, 1990, and Amendment Issued November 10, 1992]

(a) Except for the T3 rotary vacuum dryer, the emission units associated with the purification operations do not manufacture pharmaceutical products by chemical synthesis. Therefore, except for the T3 rotary vacuum dryer, these emission units are not subject to the requirements of 326 IAC 8-5-3 (VOC Emission Limitations for Synthesized Pharmaceutical Manufacturing Operations).

(b) The T3 rotary vacuum dryer does not dry pharmaceutical products by chemical synthesis with a potential to emit equal to or greater than 15 pounds per day. Therefore, this dryer is not subject to the requirements of 326 IAC 8-5-3.

D.4.3 T3 Rotary Vacuum Dryer Process Vent Standard [40 CFR 63.1254(a)(2)]

Pursuant to 40 CFR 63 Subpart GGG (Pharmaceutical MACT Standard), undiluted and uncontrolled process vent streams equal to or greater than 50 ppmv HAP from pharmaceutical processes from the T3 rotary vacuum dryer shall be limited to an annual mass limit of 900 kilograms (kg) per 365-day period to comply with the individual process-based mass limit standards under 40 CFR 63.1254(a)(2)(i). The Permittee shall follow the process-based mass limit requirements in Condition D.16.5 when a control device is used to demonstrate compliance with the process-based mass limit standards.

D.4.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is not required for any of the facilities or control devices described in this Section.

Testing and Monitoring Requirements [326 IAC 2-7-6(1) (6)] [326 IAC 2-7-5(1)]

D.4.5 Testing Requirements [326 IAC 2-7-6(1), (6)]

No emissions testing is required for the emission units described in this Section at this time, but IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. The requirements for conducting performance tests that may be required by IDEM in the future are described in Section C – Performance Testing.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.4.6 Record Keeping and Reporting Requirements [40 CFR 63.1254(a)(2)]

(a) The Permittee shall maintain the records in Condition D.16.6 for the T3 rotary vacuum dryer when it is being used to dry commercial pharmaceutical product and has process vents subject to the 40 CFR 63, Subpart GGG (Pharmaceutical MACT Standards) in accordance with the process-based mass standard.

(b) The Permittee shall follow the reporting requirements in Condition D.16.7 for the T3 rotary vacuum dryer when it is being used to dry commercial pharmaceutical product and has process vents subject to the 40 CFR 63, Subpart GGG (Pharmaceutical MACT Standards) in accordance with the process-based mass standard.

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.4.7 Modifications and Construction: Advance Approval of Permit Conditions Requirements

The emission units described in this D section are not subject to the advance approval permit conditions.

SECTION D.5 FERMENTED PRODUCTS - SUPPORT OPERATION CONDITIONS

Emissions Unit Description: [326 IAC 2-7-5(14)]

(a) The following emissions units are subject to applicable requirements described in this D section:

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
Fermented Products Wastewater Sludge Management Operations:					
T110-TKA	Bio-solids Storage Tank	T110	290,000	gallons	T110 Iron Sponge Reactor
T110-TKB	Bio-solids Storage Tank	T110	290,000	gallons	T110 Iron Sponge Reactor
T110-TKC	Bio-solids Storage Tank	T110	290,000	gallons	T110 Iron Sponge Reactor
T110-TKD	Bio-solids Storage Tank	T110	290,000	gallons	T110 Iron Sponge Reactor

(b) The following emission units are not subject to applicable requirements described in this D section:

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
Fermented Products Wastewater Treatment (100 Series Tanks):					
T174*	Thermal Research Incinerator	T174	9	MMBtu/hr	N/A
T10-TK101	Aeration Tank	Atmosphere	110,000	gallons	None
T10-TK102	Aeration Tank	Atmosphere	123,000	gallons	None
T10-TK103	Aeration Tank	Atmosphere	123,000	gallons	None
T10-TK104	Aeration Tank	Atmosphere	123,000	gallons	None
T10-TK111*	Centrate Holding Tank	T174	1,600	gallons	T174** Incinerator
T10-TK120	Aeration Tank	Atmosphere	270,000	gallons	None
T10-TK121*	Clarifier*	T174	122,000	gallons	T174** Incinerator
T10-TK122*	Clarifier*	T174	122,000	gallons	
T10-TK123*	Lift Station*	T174	8,500	gallons	
T10-TK124*	Nitrification Tank*	Atmosphere	1,700,000	gallons	None
T10-TK125*	Nitrification Tank*	Atmosphere	1,700,000	gallons	None
T10-TK126*	Nitrification Tank*	Atmosphere	1,700,000	gallons	None
T10-TK127*	Nitrification Clarifier*	Atmosphere	90,000	gallons	None
T10-TK128*	Nitrification Clarifier*	Atmosphere	90,000	gallons	None
T10-TK131*	Lift Station	Atmosphere	1,900	gallons	None

T10-TK132*	Final Clarifier	Atmosphere	155,000	gallons	None
T10-TK133*	Lift Station	Atmosphere	650	gallons	None
T10-TK141*	Lift Station	Atmosphere	4,600	gallons	None

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
T10-TK142*	Final Clarifier*	Atmosphere	155,000	gallons	None
T10-TK143*	Lift Station	Atmosphere	800	gallons	None
T160-TK162*	Antifoam Supply Tank	Atmosphere	1,300	gallons	None
T160-TK163*	Antifoam Supply Tank	Atmosphere	1,300	gallons	None
T160-TK164*	Sodium Aluminate Tank	Atmosphere	2,500	gallons	None
T160-TK165*	Polymer Supply Tank	Atmosphere	100	gallons	None
T79-TK400*	Lift Station	Atmosphere	14,000	gallons	None
T79-TK401*	Lift Station	Atmosphere	21,588	gallons	None
T79-TK402*	Lift Station	Atmosphere	21,588	gallons	None
Fermented Products Wastewater Sludge Management Operations:					
T42*	Centrifuge*	T174	150	gal/min	T174 Incinerator**
T42-A*	Sludge Centrifuge*	T174	100	gal/min	
T42-1*	Centrifuge Feed Tank	T174	20,000	gallons	T174 Incinerator**
T42-2*	Centrifuge Feed Tank	T174	20,000	gallons	T174 Incinerator**

* Emission units marked with an asterisk are insignificant activities as defined by 326 IAC 2-7-1(21)(A)-(C).
** Control devices marked with a double asterisk are voluntary units and are not required to demonstrate compliance with any applicable regulations.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.5.1 Non-Applicability Determination of Pharmaceutical MACT Standards [40 CFR 63, Subpart GGG]

The fermented products support operations are not subject to the requirements of 40 CFR 63, Subpart GGG (Pharmaceutical MACT Standards) because:

(a) The emission units associated with the fermented products wastewater sludge management operations do not process, use, or produce hazardous air pollutant (HAP) emissions in excess of 50 ppmv pursuant to 40 CFR 63.1251 (Process Vent Definition); and

(b) The wastewater associated with the fermented products wastewater treatment plant do not contain HAP emissions in excess of 5 ppmw pursuant to 40 CFR 63.1251 (Wastewater Stream Definition).

D.5.2 Non-Applicability Determination of State VOC Emission Standards [326 IAC 8-5-3]

The emission units associated with the fermented products support operations do not manufacture pharmaceutical products by chemical synthesis. Therefore, these emission units are not subject to the requirements of 326 IAC 8-5-3 (VOC Emission Limitations for Synthesized Pharmaceutical Manufacturing Operations).

D.5.3 Emission Limitations and Standards [326 IAC 2-2, CP 157-4363 Issued August 28, 1996, and Amendment 157-8953 Issued November 12, 1997 (Revised by AA 157-28636-00006)]

To avoid the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration), the Permittee shall comply with the following:

(a) The total reduced sulfur (TRS) emissions from the iron sponge reactor shall not equal or exceed 2.28 pounds per hour, which is equivalent to 762 micrograms per liter (ug/l). This emission limitation also satisfies the emission limitations for reduced sulfur compounds and hydrogen sulfide; and

(b) TRS, reduced sulfur compounds and hydrogen sulfide emissions from the transfer of bio-solids from the storage tanks to trucks shall be controlled by a vapor control system that exhausts to the iron sponge reactor.

D.5.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the iron sponge reactor system.

Testing and Monitoring Requirements [326 IAC 2-7-6(1) (6)] [326 IAC 2-7-5(1)]

D.5.5 Sampling and Analysis Requirements [CP 157-4363 Issued August 28, 1996 (Revised by this permit), and Amendment 157-8953 Issued November 12, 1997 (Revised by this permit)]

The Permittee shall measure and record the TRS outlet concentration of the air stream to the atmosphere once per calendar week using the sampling protocol and analysis methods most recently approved by IDEM.

D.5.6 Monitoring Requirements [CP 157-4363 Issued August 28, 1996 (Revised by this permit), and Amendment 157-8953 Issued November 12, 1997 (Revised by this permit)]

The Permittee shall monitor and record the pressure drop across the iron sponge reactor annubar once per day. Unless operated under conditions for which Section C - Response to Abnormal or Out-of-Range Compliance Monitoring Measurements specifies otherwise, the pressure drop across the operating reactor shall be maintained within the range of 0.2 and 2 inches of water column. The Response to Abnormal or Out-of-Range Compliance Monitoring Measurements for the iron sponge reactor system shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above-mentioned range for any one reading.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.5.7 Record Keeping Requirements [CP 157-4363 Issued August 28, 1996 (Revised by this permit), and Amendment 157-8953 Issued November 12, 1997 (Revised by AA 157-28636-00006)]

(a) The Permittee shall maintain the following records:

(1) daily pressure drop readings across the iron sponge reactor annubar; and

(2) weekly analysis of the TRS outlet concentration from the iron sponge reactor.

(b) Reserved

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.5.8 Modifications and Construction: Advance Approval of Permit Conditions Requirements

The emission units described in this D section are not subject to the advance approval permit conditions.

Compliance Determination Requirements

D.5.9 Reserved

SECTION D.6 BULK CHEMICAL MANUFACTURING (BCM) PRODUCTION OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14]:

(a) The emission units listed below are subject to applicable requirements described or referred to in this D section. The emission units in the BCM production operations can be generally described as process vessels (tanks), crystallizers, filters, centrifuges, dryers, process scrubber systems, and process condenser systems and are referred to as process vents under the National Emission Standards of Hazardous Air Pollutants (NESHAP) for Pharmaceutical Production Operations (Pharmaceutical MACT) found at 40 CFR Part 63 Subpart GGG, Miscellaneous Organic NESHAP (MON) found at 40 CFR Part 63 Subpart FFFF or Hazardous Organic NESHAP for the synthetic organic chemical manufacturing industry (HON) at 40 CFR Part 63 Subparts F and G.

General activities such as open manway operations, charging a liquid from a drum to a tank, centrifuge emptying operations, drum filling operations, or loading wetcake into driers are also defined as process vents. Individual identification of these activities are not listed in the description tables given they are not stationary and are continually change. Each of these activity types will follow the compliance requirements outlined in this permit section.

Ancillary activities, such as heat exchange systems, are not considered process vents and have not been included in the description tables.

Source ID	Equipment Description	Stack/Vent ID	Nominal Capacity	Control Device
Building T27:				
T27-TK3001	Process Tank	RTO	200 gal	RTO
T27-TK3002	Process Tank	RTO	200 gal	RTO
T27-TK3101	Process Tank	RTO	1000 gal	RTO
T27-TK3102	Process Tank	RTO	1000 gal	RTO
T27-TK3103	Process Tank	RTO	1000 gal	RTO
T27-TK3104	Process Tank	RTO	1000 gal	RTO
T27-TK3105	Process Tank	RTO	1000 gal	RTO
T27-TK3201	Process Tank	RTO	1000 gal	RTO
T27-TK3202	Process Tank	RTO	1000 gal	RTO
T27-TK3203	Process Tank	RTO	1000 gal	RTO
T27-TK3204	Process Tank	RTO	1000 gal	RTO
T27-TK3205	Process Tank	RTO	1000 gal	RTO
T27-TK3207	Process Tank	RTO	350 gal	RTO
T27-TK3301	Process Tank	RTO	2000 gal	RTO
T27-TK3302	Process Tank	RTO	2000 gal	RTO
T27-TK3303	Process Tank	RTO	2000 gal	RTO
T27-TK3304	Process Tank	RTO	2000 gal	RTO
T27-TK3305	Process Tank	RTO	500 gal	RTO
T27-TK3401	Process Tank	RTO	750 gal	RTO
T27-TK3402	Process Tank	RTO	750 gal	RTO
T27-TK3404	Process Tank	RTO	750 gal	RTO
T27-TK3405	Process Tank	RTO	750 gal	RTO

	T27-TK3406	Process Tank	RTO	750 gal	RTO	
	T27-TK3407	Process Tank	RTO	1000 gal	RTO	
	T27-TK3408	Process Tank	RTO	350 gal	RTO	
	T27-TK3501	Process Tank	RTO	2000 gal	RTO	
	T27-TK3502	Process Tank	RTO	2000 gal	RTO	
	T27-TK3503	Process Tank	RTO	2000 gal	RTO	
	T27-TK3504	Process Tank	RTO	2000 gal	RTO	
	T27-TK3505	Process Tank	RTO	500 gal	RTO	
	T27-TK3506	Process Tank	RTO	2000 gal	RTO	
	T27-TK3601	Process Tank	RTO	2000 gal	RTO	
	T27-TK3602	Process Tank	RTO	1000 gal	RTO	
	T27-TK3603	Process Tank	RTO	2000 gal	RTO	
	T27-TK3605	Process Tank	RTO	500 gal	RTO	
	T27-TK3606	Process Tank	RTO	2000 gal	RTO	
	T27-TK3607	Process Tank	RTO	500 gal	RTO	
	T27-TK3803	Process Tank	RTO	1000 gal	RTO	
	T27-TK4001	Process Tank	RTO	2000 gal	RTO	
	T27-TK4002	Process Tank	RTO	2000 gal	RTO	
	T27-TK4004	Process Tank	RTO	1000 gal	RTO	
	T27-TK4005	Process Tank	RTO	1500 gal	RTO	
	T27-TK4006	Process Tank	RTO	2000 gal	RTO	
	T27-TK4006A	Process Tank	RTO	2000 gal	RTO	
	T27-TK4007	Process Tank	RTO	2000 gal	RTO	
	T27-TK4007A	Process Tank	RTO	2000 gal	RTO	
	T27-TK4008	Process Tank	RTO	2000 gal	RTO	
	T27-TK4009	Process Tank	RTO	1000 gal	RTO	
	T27-TK4010	Process Tank	RTO	1000 gal	RTO	
	T27-TK4011	Process Tank	RTO	1000 gal	RTO	
	T27-TK4013	Process Tank	RTO	750 gal	RTO	
	T27-TK4014	Process Tank	RTO	300 gal	RTO	
	T27-TK4031	Process Tank	RTO	500 gal	RTO	
	T27-TK4101	Process Tank	RTO	750 gal	RTO	
	T27-TK4103	Process Tank	RTO	500 gal	RTO	
	T27-TK4104	Process Tank	RTO	500 gal	RTO	
	T27-TK4105	Process Tank	RTO	1000 gal	RTO	
	T27-TK4203	Process Tank	RTO	500 gal	RTO	
	T27-TK4205	Process Tank	RTO	1000 gal	RTO	
	T27-TK4301	Process Tank	RTO	750 gal	RTO	
	T27-TK4302	Process Tank	RTO	500 gal	RTO	
	T27-TK4401	Process Tank	RTO	2000 gal	RTO	
	T27-TK4404	Process Tank	RTO	2000 gal	RTO	
	T27-TK4502	Process Tank	RTO	1000 gal	RTO	
	T27-TK4601	Process Tank	RTO	1000 gal	RTO	
	T27-TK4603	Process Tank	RTO	75 gal	RTO	
	T27-TK4605	Process Tank	RTO	1000 gal	RTO	
	T27-TK4701	Process Tank	RTO	1000 gal	RTO	
	T27-TK4801A	Process Tank	RTO	1000 gal	RTO	
	T27-TK4802A	Process Tank	RTO	100 gal	RTO	

T27-TK4803A	Process Tank	RTO	500 gal	RTO
T27-TK4901	Process Tank	RTO	200 gal	RTO
T27-TK4906	Process Tank	RTO	75 gal	RTO
T27-TK5004	Process Tank	RTO	500 gal	RTO
T27-TK371-A	Process Tank	RTO	50 gal	RTO
T27-TK372-A	Process Tank	RTO	500 gal	RTO
T27-TK372-B	Process Tank	RTO	100 gal	RTO
T27-CENT30	Centrifuge	RTO	NA	RTO
T27-CENT38	Centrifuge	RTO	NA	RTO
T27-CENT42	Centrifuge	RTO	NA	RTO
T27-RVD53-1	Rotary Vacuum Dryer	RTO	NA	RTO
T27-FD3702A	Filter Dryer	RTO	793 gal	RTO
Building T29:				
T29-CENT1401	Heinkel Centrifuge	RTO	140 gal	RTO
T29-CENT2401	Heinkel Centrifuge	RTO	140 gal	RTO
T29-CENT3401	Heinkel Centrifuge	RTO	140 gal	RTO
T29-CD1501	Cone Dryer	RTO	2,640 gal	RTO
T29-FD8501	Filter Dryer	RTO	42 gal	RTO
T29-FD-8503	Filter Dryer	RTO	175 gal	RTO
T29-FD2502	Filter Dryer	RTO	70 gal	RTO
T29-CD3501	Cone Dryer	RTO	2,640 gal	RTO
T29-IBC8251	Process Tank	RTO	150 gal	RTO
T29-IBC8253	Process Tank	RTO	150 gal	RTO
T29-IBC8254	Process Tank	RTO	150 gal	RTO
T29-IBC8257	Process Tank	RTO	150 gal	RTO
T29-IBC8259	Process Tank	RTO	150 gal	RTO
T29-SFH1121	Process Tank	RTO	NA	RTO
T29-SFH3121	Process Tank	RTO	NA	RTO
T29- REAC1201	Process Tank	RTO	2000 gal	RTO
T29- REAC 1202	Process Tank	RTO	2000 gal	RTO
T29- REAC 1203	Process Tank	RTO	2000 gal	RTO
T29- REAC 1204	Process Tank	RTO	2000 gal	RTO
T29- REAC 1205	Process Tank	RTO	2000 gal	RTO
T29- REAC 2201	Process Tank	RTO	1600 gal	RTO
T29- REAC 2202	Process Tank	RTO	2000 gal	RTO
T29- REAC 2203	Process Tank	RTO	2000 gal	RTO
T29- REAC 2204	Process Tank	RTO	2000 gal	RTO
T29- REAC 2205	Process Tank	RTO	2000 gal	RTO
T29- REAC 3201	Process Tank	RTO	2000 gal	RTO
T29- REAC 3202	Process Tank	RTO	2000 gal	RTO
T29- REAC 3203	Process Tank	RTO	2000 gal	RTO
T29- REAC 3204	Process Tank	RTO	2000 gal	RTO
T29- REAC 3205	Process Tank	RTO	2000 gal	RTO
T29- REAC 4201	Process Tank	RTO	2,000 gal	RTO
T29- REAC 4202	Process Tank	RTO	500 gal	RTO
T29- REAC 4203	Process Tank	RTO	2000 gal	RTO
T29-TK7920	Process Tank	RTO	200 gal	RTO

T29-TK7921	Process Tank	RTO	80 gal	RTO
T29-TK7922	Process Tank	RTO	200 gal	RTO
T29-TK8123	Process Tank	RTO	200 gal	RTO
T29-TK8211	Process Tank	RTO	100 gal	RTO
T29-TK8212	Process Tank	RTO	100 gal	RTO
T29-TK8213	Process Tank	RTO	100 gal	RTO
T29-TK8214	Process Tank	RTO	100 gal	RTO
T29-TK8216	Accumulator Tank	RTO	50 gal	RTO
T29-TK8217	Accumulator Tank	RTO	50 gal	RTO
T29-TK8218	Accumulator Tank	RTO	50 gal	RTO
T29-TK8220	Accumulator Tank	RTO	50 gal	RTO
T29-TK8256	Process Tank	RTO	150 gal	RTO
T29-TK8219	Accumulator Tank	RTO	50 gal	RTO
T29-TK2502M	Accumulator Tank	RTO	100 gal	RTO
T29-TK1401	Accumulator Tank	RTO	50 gal	RTO
T29-TK2401	Accumulator Tank	RTO	50 gal	RTO
T29-TK3401	Accumulator Tank	RTO	50 gal	RTO
Building T31:				
T31-CENT	Centrifuge	RTO	98 gal	RTO
T31-FD803	Filter Dryer	RTO	50 gal	RTO
T31-TK601	Process Tank	RTO	500 gal	RTO
T31-TK602	Process Tank	RTO	500 gal	RTO
T31-TK603	Process Tank	RTO	500 gal	RTO
T31-TK604	Process Tank	RTO	500 gal	RTO
T31-TK611	Process Tank	RTO	500 gal	RTO
T31-TK611DT01	Process Tank	RTO	50 gal	RTO
T31-TK612	Process Tank	RTO	500 gal	RTO
T31-TK613	Process Tank	RTO	500 gal	RTO
T31-TK614	Process Tank	RTO	500 gal	RTO
T31-TK631	Process Tank	RTO	300 gal	RTO
T31-TK641	Process Tank	RTO	100 gal	RTO
T31-TK643	Process Tank	**	100 gal	T79 or RTO**
Building T31A:				
T31A-CENT985	Centrifuge	RTO	N/A	RTO
T31A-FD861	Filter Dryer	RTO	50 gal	RTO
T31A-FD874	Filter Dryer	RTO	50 gal	RTO
T31A-TK61	Process Tank	RTO	50 gal	RTO
T31A-TK63	Process Tank	RTO	100 gal	RTO
T31A-TK64	Process Tank	RTO	50 gal	RTO
T31A-TK621	Process Tank	RTO	300 gal	RTO
T31A-TK622	Process Tank	RTO	800 gal	RTO
T31A-TK651	Process Tank	RTO	450 gal	RTO
T31A-TK661	Process Tank	RTO	300 gal	RTO
T31A-TK681	Process Tank	RTO	500 gal	RTO
T31A-TK682	Process Tank	RTO	500 gal	RTO
T31A-TK683	Process Tank	RTO	500 gal	RTO

T31A-TK684	Process Tank	RTO	500 gal	RTO
T31A-TK691	Process Tank	RTO	500 gal	RTO
T31A-TK692	Process Tank	RTO	500 gal	RTO
T31A-TK693	Process Tank	RTO	500 gal	RTO
T31A-TK694	Process Tank	RTO	500 gal	RTO
Building T99:				
T99-ED42	Heinkel Centrifuge	RTO	NA	RTO
T99-PD43	Pan Dryer	RTO	793 gal	RTO
T99-PD44	Pan Dryer	RTO	793 gal	RTO
T99-RVD1	Rotary Vacuum Dryer	RTO	1200 gal	RTO
T99-RVD2	Rotary Vacuum Dryer	RTO	1200 gal	RTO
T99-RVD3	Rotary Vacuum Dryer	RTO	1200 gal	RTO
T99-RVD5	Rotary Vacuum Dryer	RTO	1200 gal	RTO
T99-RVD6	Rotary Vacuum Dryer	RTO	1200 gal	RTO
T99-RVD7	Rotary Vacuum Dryer	RTO	1200 gal	RTO
T99-RVD8	Rotary Vacuum Dryer	RTO	1200 gal	RTO
T99-TK-D9	Process Tank	RTO	449 gal	RTO
T99-FD-D9*	Filter Dryer	RTO	NA	RTO
T99-TK-D-9D*	Portable Tank	RTO	155 gal	RTO
T99-TK-D41	Process Tank	RTO	300 gal	RTO
T99-TK-D42	Process Tank	RTO	150 gal	RTO
Building T100:				
T100-CENT60	Centrifuge	RTO	N/A	RTO
T100-CENT61	Centrifuge	RTO	N/A	RTO
T100-CENT62	Centrifuge	RTO	N/A	RTO
T100-CENT63	Centrifuge	RTO	N/A	RTO
T100-CENT64	Centrifuge	RTO	N/A	RTO
T100-CENT65	Centrifuge	RTO	N/A	RTO
T100-CENT66	Centrifuge	RTO	N/A	RTO
T100-CENT67	Centrifuge	RTO	N/A	RTO
T100-CENT68	Centrifuge	RTO	N/A	RTO
T100-CENT69	Centrifuge	RTO	N/A	RTO
T100-CENT70	Centrifuge	RTO	N/A	RTO
T100-TK1	Process Tank	RTO	2000 gal	RTO
T100-TK2	Process Tank	RTO	4000 gal	RTO
T100-TK3	Process Tank	RTO	2000 gal	RTO
T100-TK4	Process Tank	RTO	2000 gal	RTO
T100-TK5	Process Tank	RTO	2000 gal	RTO
T100-TK5A*	Accumulator Tank	RTO	50 gal	RTO
T100-TK6	Process Tank	RTO	2000 gal	RTO
T100-TK7	Process Tank	RTO	4000 gal	RTO
T100-TK8	Process Tank	RTO	4000 gal	RTO
T100-TK8C	Process Tank	RTO	30 gal	RTO
T100-TK9	Process Tank	RTO	4000 gal	RTO
T100-TK10	Process Tank	RTO	4000 gal	RTO
T100-TK11	Process Tank	RTO	4000 gal	RTO

T100-TK12	Process Tank	RTO	4000 gal	RTO
T100-TK13	Process Tank	RTO	3300 Gal	RTO
T100-TK14	Process Tank	RTO	4000 gal	RTO
T100-TK15	Process Tank	RTO	2000 gal	RTO
T100-TK16	Process Tank	RTO	2000 gal	RTO
T100-TK17	Process Tank	RTO	2000 gal	RTO
T100-TK18	Process Tank	RTO	2000 gal	RTO
T100-TK18A*	Distillate Tank	RTO	200 gal	RTO
T100-TK18B*	Charge Tank	RTO	60 gal	RTO
T100-TK20	Process Tank	RTO	4000 gal	RTO
T100-TK21	Process Tank	RTO	4000 gal	RTO
T100-TK22	Process Tank	RTO	2000 gal	RTO
T100-TK24	Process Tank	RTO	4000 gal	RTO
T100-TK24D*	Distillate Tank	RTO	50 gal	RTO
T100-TK25	Process Tank	RTO	4000 gal	RTO
T100-TK26	Process Tank	RTO	4000 gal	RTO
T100-TK27	Process Tank	RTO	4000 gal	RTO
T100-TK28	Process Tank	RTO	4000 gal	RTO
T100-TK29	Process Tank	RTO	4000 gal	RTO
T100-TK30	Process Tank	RTO	4000 gal	RTO
T100-TK-30A	Process Tank	RTO	70 gal	RTO
T100-TK31	Process Tank	RTO	4000 gal	RTO
T100-TK31B	Process Tank	RTO	50 gal	RTO
T100-TK32	Process Tank	RTO	4000 gal	RTO
T100-TK33	Process Tank	RTO	1000 gal	RTO
T100-TK34	Process Tank	RTO	1000 gal	RTO
T100-TK35	Process Tank	RTO	1000 gal	RTO
T100-TK36	Process Tank	RTO	1000 gal	RTO
T100-TK37	Process Tank	RTO	1000 gal	RTO
T100-TK38	Process Tank	RTO	1000 gal	RTO
T100-TK40	Portable Process Tank	RTO	100 gal	RTO
T100	Portable Process Tank	RTO	N/A	RTO
T100-PTK1	Portable Cleaning Tank	RTO	150 gal	RTO
T100-TK14A	Accumulator Tank	RTO	50 gal	RTO
T100-TK21A	Accumulator Tank	RTO	50 gal	RTO
T100-TK39	CIP Tank	RTO	500 gal	RTO
Spare Equipment (not associated with a single building)				
T27-CENT 16	Centrifuge	***	NA	***
T27-CENT 19	Centrifuge	***	NA	***
T27-CENT 37	Centrifuge	***	NA	***
T27-CENT 40	Centrifuge	***	NA	***
T28-CENT15	Centrifuge	***	NA	***
T31-CENT504	Centrifuge	***	13 gal	***
T31-RVD T47733	Rotary Vacuum Dryer	**	37 gal	***
T31A-TK65	Portable Process Tank	**	100 gal	***
T31A-TK8252	Portable Process Tank	**	150 gal	***

* Emission units marked with an asterisk are insignificant activities as defined by 326 IAC 2-7-1(21).

** This equipment is currently not in service; however, this equipment shall be tied into either the RTO control system or the T79 control system upon startup.

*** Spare equipment may be used anywhere on the plant site. If the equipment is used in T27, T31, T31A, T99, or T100, it will be vented to the RTO as required by Section D.6 of the permit. If the equipment is used in the T171 area, it will be vented to the atmosphere as allowed by Section D.16 of the permit.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.6.0 VOC, CO and Fluorides PSD BACT Requirements [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3 Prevention of Significant Deterioration (PSD), the VOC Best Available Control Technology (BACT) for the BCM Production Operation is use of a regenerative thermal oxidizer (RTO) to control VOC emissions to a volumetric concentration of no more than 20 parts per million volume (ppmv) based on a 24-hour daily average or reduce VOC emissions by a control efficiency of 98% or more.

(b) Pursuant to 326 IAC 2-2-3 PSD, the CO BACT for BCM Production Operations is good combustion practices at the RTO to limit CO emissions to no more than 73 ppmv based on a 24-hour daily average.

(c) Pursuant to 326 IAC 2-2-3 PSD, the Fluorides (F-) BACT for BCM Production Operations is use of caustic scrubbing with NaOH injection to achieve at least 98% removal of hydrogen halide and halogen emissions or no more than 20 ppmv of hydrogen halide and halogen emissions based on a 24-hour daily average for pharmaceutical production. Fluorides BACT for miscellaneous organic chemical manufacturing operations and synthetic organic chemical manufacturing operations are identified in Condition D.14.12.

D.6.1 Standards for BCM Process Vents [40 CFR 63.1254, 40 CFR 63.2550, 326 IAC 2-2-3, and 326 IAC 8-5-3]

The following streamlined standards for the BCM process operations satisfy the Maximum Achievable Control Technology Standards for Pharmaceutical Production Operations (Pharmaceutical MACT) for process vents [40 CFR 63.1254], Miscellaneous Organic National Emission Standards for Hazardous Air Pollutants (MON) Standards for process vents [40 CFR 63.2550], Prevention of Significant Deterioration Best Available Control Technology (PSD BACT) requirements [326 IAC 2-2-3] and Reasonably Available Control Technology (RACT) requirements for synthesized pharmaceutical manufacturing operations [326 IAC 8-5-3]:

(a) Except as otherwise provided in Conditions D.6.2, the emission limits and standards applicable for each operating BCM process vent containing undiluted and uncontrolled process vent streams equal to or greater than 50 ppmv HAP, 50 ppmv VOC, or 15 pounds per day VOC are described in Section D.14 of this permit. The applicable emission limits and standards, including the operation, inspection, and maintenance requirements for the RTO control system and its closed - vent system are described in Section D.14 of this permit.

(b) The Permittee shall cover all in-process tanks associated with the BCM operations having an exposed liquid surface containing VOC greater than 15 pounds per day unless production, sampling, maintenance, or inspection procedures require operator access.

(c) The Permittee shall enclose all centrifuges, rotary vacuum filters, and other filters having an exposed liquid surface, where the liquid contains VOC and exerts a total vapor pressure of 0.5 pounds per square inch or more at $20^{O}C$.

D.6.2 Exceptions to BCM Process Vent Standards Systems [40 CFR 63.1254, 326 IAC 2-2-3]

(a) The Permittee is not required to control emissions from BCM process vents in accordance with Condition D.6.1(a) provided:

(1) For pharmaceutical operation process vents, the sum of the BCM process vent streams within an individual BCM process does not exceed an annual mass limit of 900 kilograms (2000 pounds) of HAP per 365-day period and the requirements of Condition C.5 of this permit are met. If control device(s) are used for the annual mass limit, the testing and monitoring requirements in Condition D.16.5 apply;

(2) For miscellaneous organic chemical manufacturing operation process vents:

(A) The sum of the uncontrolled BCM miscellaneous organic chemical manufacturing operation process vents is less than or equal to 10,000 pounds per year for batch process vents; or

(B) Vent flow is < 0.005 standard cubic meter per minute or TRE > 1.9 for continuous process vents.

(b) The control standards for halogenated vent streams from miscellaneous organic chemical manufacturing process units are included as an Alternative Operating Scenario in Condition D.6.10 of this permit and are excluded from the standards in Condition D.6.1.

(c) Pursuant to 326 IAC 2-2-3, VOC BACT for production equipment exhaust systems (i.e., Local Exhaust Vents) containing less than 50 ppm HAP or with actual emissions less than 33 lbs/day VOC is no control.

D.6.3 Leak Detection and Repair (LDAR) Standards [326 IAC 2-2-3, 326 IAC 8-5-3, 40 CFR 63.1255, 40 CFR 63.2535(d)]

The LDAR standards that apply to components associated with the BCM production operations are described in Sections E.1 and E.2 of this permit.

D.6.4 Heat Exchange System Requirements [326 IAC 2-2-3, 40 CFR 63.1252(c), 40 CFR 63.2490 and Table 10. 40 CFR 63.104]

For each heat exchange system used to cool process equipment used in pharmaceutical manufacturing, miscellaneous organic chemical manufacturing or synthetic organic chemical manufacturing, the Permittee shall either:

(a) Meet the exemption criteria in 40 CFR 63.104(a); or

(b) Monitor and repair according to the requirements of 40 CFR 63.104(b) through 63.104(f).

D.6.5 Startup, Shutdown and Malfunction Requirements [326 IAC 2-2-3, 40 CFR 63.1250(g), 40 CFR 63.2540 and Table 12]

(a) MON [40 CFR 63.2540 and Table 12] and PSD BACT SSM Requirements [326 IAC 2-2-3]:

(1) The startup, shutdown and malfunction (SSM) Plan requirements are described in Section D.14.3.

(2) The SSM requirements for the RTO control system, and associated closed-vent system, are described in Section D.14.3 of this permit.

(b) Pharmaceutical MACT SSM Requirements [40 CFR 63.1250(g)]

The requirements for SSM events pursuant to the Pharmaceutical MACT are described in Section D.14.3 of this permit.

Testing and Monitoring Requirements [326 IAC 2-7-5(1), 326 IAC 2-7-6(1)]

D.6.6 Testing Requirements

The testing requirements for the RTO control system and its associated closed-vent system used to control emissions from the emission units listed in this section are described in Section D.14 of this permit.

D.6.7 Monitoring Requirements

The monitoring requirements for the RTO control system and its associated closed-vent system used to control emissions from the applicable emission units listed in this section are described in Section D.14 of this permit.

Record Keeping and Reporting [326 IAC 2-7-5(3) and 326 IAC 2-7-19]

D.6.8 Record Keeping and Reporting Requirements

(a) Record Keeping Requirements

(1) RTO Control System Records - The record keeping and reporting requirements for the RTO control system, and associated closed-vent systems, used to control emissions from the emission units listed in this section are described in Section D.14 of this permit.

(2) Process Records — The Permittee shall maintain the following records when using the process vent standard described in Condition D.6.1(c):

(A) Daily rolling annual total HAP emissions;

(B) Number of batches per year for each batch process;

(C) Standard batch uncontrolled and controlled emissions for each process;

(D) Actual uncontrolled and controlled emissions for each nonstandard batch; and

(E) Record whether each batch operated was considered a standard batch.

(3) Heat Exchange System Records - If demonstrating compliance with Condition D.6.4(b), records of monitoring data and leak information in accordance with 40 CFR 63.104(f)(1).

(4) LDAR Records - The record keeping and reporting requirements for the LDAR standards are described in Sections E.1and E.2 of this permit.

(5) SSM Records - The SSM record keeping requirements under PSD BACT are described in Section D.14.10(a).

(b) Periodic Reporting Requirements

The streamlined quarterly reporting requirements are described in Sections D.14.10(b), E.1.3, and E.2.3, which shall satisfy the Pharmaceutical MACT standards [40 CFR 63.1260(g)], MON standards [40 CFR 63.2520(e)] and the PSD BACT requirements [326 IAC 2-1.1-11].

(c) Immediate Reporting Requirements

(1) The immediate reporting requirements for the PSD BACT [326 IAC 2-2-3] are described in Section D.14.10(c)(1).

(2) The immediate reporting requirements for the Pharmaceutical MACT [40 CFR 63.1250(g)] are described in Section D.14.10(c)(2).

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.6.9 Modifications and Construction: Advance Approval of Permit Conditions

(a) The Permittee may modify any existing emission units listed in this section of the permit without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the modified emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

(b) The Permittee may construct and install new emission units of the types described in this D section without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the new emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

Alternative Operating Scenarios [326 IAC 2-7-20(d)]

D.6.10 Alternative Operating Scenarios

(a) The Permittee may elect to operate a miscellaneous organic chemical manufacturing process that generates a Group 1 halogenated process vent or a process vent with uncontrolled hydrogen halide and halogen emissions ≥1,000 pounds per year, which are subject to 40 CFR 63.2455 or 63.2460. The requirements for hydrogen halide and halogen emissions under this scenario are described in D.14.12(a).

(b) The Permittee may elect to operate a chemical manufacturing process unit that generates a Group 1 continuous process vent subject to 40 CFR Part 63 Subparts F and G (HON) with vent flow greater than or equal to 0.005 standard cubic meters per minute, total organic HAP greater than or equal to 50 ppmv, and total resource effectiveness less than or equal to 1.0, The requirements for TOC and hydrogen halide and halogen emissions under this scenario are described in Conditions D.14.12(b) and D.14.12(c), respectively.

(c) The Permittee shall keep a log of the scenario under which the BCM production is operating according to 326 IAC 2-7-5(9)(A). A summary of these records shall be included in the annual compliance certification in accordance with 326 IAC 2-7-5(9)(C).

SECTION D.7 BCM SUPPORT OPERATIONS - SOLVENT RECOVERY OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14)]:

(a) The emission units listed below are subject to applicable requirements described or referred to in this D section. The BCM solvent recovery emission units can be generally described as columns, stills, evaporators, accumulators, process condensers and receivers and are referred to as process vents under the National Emission Standards of Hazardous Air Pollutants (NESHAP) for Pharmaceutical Production Operations (Pharmaceutical MACT) found at 40 CFR Part 63,, Subpart GGG, NESHAP Offiste Waste and Recovery Operations (Offsite Waste) MACT found at 40 CFR Part 63 Subpart DD, Miscellaneous Organic NESHAP (MON) found at 40 CFR Part 63 Subpart FFFF or Hazardous Organic NESHAP for the synthetic organic chemical manufacturing industry (HON) at 40 CFR Part 63 Subparts F and G. The solvent recovery columns may also be defined as treatment units under the Offsite Waste MACT.

General activities such as open manway operations, charging a liquid from a drum to a tank, centrifuge emptying operations, drum filling operations, or loading wetcake into driers are also defined as process vents. Individual identification of these activities are not listed in the description tables given they are not stationary and are continually change. Each of these activity types will follow the compliance requirements outlined in this permit section.

Ancillary activities, such as heat exchange systems, are not considered process vents and have not been included in the description tables.

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	Control Device
Building T19:				
T19-STL1	Still	T79	1500 gal	T79
T19-STL2	Still	T79	4000 gal	T79
T19-COL3	Column	T79	NA	T79
T19-REC1	Receiver	T79	2000 gal	T79
T19-REC10	Receiver	T79	2000 gal	T79
T19-REC11	Receiver	T79	5300 gal	T79
T19-REC2	Receiver	T79	2000 gal	T79
T19-REC3	Receiver	T79	2000 gal	T79
T19-REC6	Receiver	T79 or RTO*	300 gal	T79 or RTO*
T19-REC7	Receiver	T79 or RTO*	300 gal	T79 or RTO*
T19-REC8	Receiver	T79 or RTO*	750 gal	T79 or RTO*
T19-REC9	Receiver	T79	750 gal	T79
T19-TK-19-29S*	HCl Acid Storage	Atmosphere	6,000 gal	Conservation Vent
T19-TK-19-29N*	HCl Acid Storage	Atmosphere	6,000 gal	Conservation Vent
T19-TK9A3A	Accumulator	T79	100 gal	T79
Building T52:				
T52-REC52-1	Stainless Receiver	T79	2000 gal	T79
T52-REC52-2	Stainless Receiver	T79	2000 gal	T79
T52-ACC9	Accumulator	T79	NA	T79
T52-ACC10	Accumulator	T79	NA	T79
T52-ACC5	Accumulator	T79	NA	T79
T52-ACC6	Accumulator	T79	NA	T79
T52-COL52-8	Wash Column	T79	NA	T79

T52-EVAP10	Evaporator	T79	2000 gal	T79
T52-EVAP5	Evaporator	T79	2000 gal	T79
T52-EVAP6	Evaporator	T79	2000 gal	T79
T52-STPR52-14	Steam Stripper	T79	250 gal	T79
T52-ACC14	Accumulator	T79	NA	T79
T52-TK5K4A*	Sulfuric Acid Storage	Atmosphere	125 gal	None
Building T61:				
T61-COL61-1	Column	T79	NA	T79
T61-TK-1A	Accumulator	T79	100 gal	T79
T61-COL61-2	Column	T79	NA	T79
T61-TK-2A	Accumulator	T79	100 gal	T79
T61-TK-2B	Accumulator	T79	75 gal	T79
T61-TK-2C	Accumulator	T79	50 gal	T79
T61-COL61-3	Column	T79	NA	T79
T61-TK-3A	Accumulator	T79	100 gal	T79
T61-TK-3B	Accumulator	T79	75 gal	T79
T61-TK-3C	Accumulator	T79	50 gal	T79
T61-REC1	Receiver	T79	5000 gal	T79
T61-REC2	Receiver	T79	5000 gal	T79
T61-REC3	Receiver	T79	5000 gal	T79
T61-REC4	Receiver	T79	5000 gal	T79
T61-REC5	Receiver	T79	5000 gal	T79
T61-REC6	Receiver	T79	5000 gal	T79
T61-REC7	Receiver	T79	5000 gal	T79
T61-REC8	Receiver	T79	5000 gal	T79
Building T127				
T127-TK-46*	50% Caustic Storage	Atmosphere	39,000 gal	Open to Atmosphere
T127-TK-47*	20% Caustic Storage	Atmosphere	39,000 gal	Open to Atmosphere
Spare Equipment (not associated with a single building)				
T61-TK-1C	Accumulator	T79	50 gal	T79

* This equipment is currently not in service; however, this equipment shall be tied into either the RTO control system or the T79 control system upon startup.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.7.0 VOC PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 Prevention of Significant Deterioration (PSD), the VOC Best Available Control Technology (BACT) for BCM Support Operations – Solvent Recovery Operations is use of direct incineration to control VOC emissions to a volumetric concentration of no more than 20 parts per million (ppmv) based on a 24-hour daily average or reduce VOC emissions by a control efficiency of 98% or more.

D.7.1 Standards for BCM Support Process Vents [40 CFR 63.1254, CFR 63.690, 40 CFR 63.2550, 40 CFR 63.111, 326 IAC 2-2-3, and 326 IAC 8-5-3]

The following streamlined standards for the BCM solvent recovery operations satisfy the Pharmaceutical MACT Standards for process vents [40 CFR 63.1254], Offsite Waste MACT Standards for process vents [40 CFR 63.690], Miscellaneous Organic National Emission

Standards for Hazardous Air Pollutants (MON) Standards for process vents [40 CFR 63.2550], NESHAP from the Synthetic Organic Chemical Manufacturing Industry (HON) Standards for process vents [40 CFR 63.111], PSD BACT requirements [326 IAC 2-2-3] and RACT requirements for synthesized pharmaceutical manufacturing operations [326 IAC 8-5-3]:

(a) Except as otherwise provided in Condition D.7.2, the emission limits and standards for each operating BCM process vent containing undiluted and uncontrolled process vent streams equal to or greater than 50 ppmv VOHAP, 50 ppmv VOC, or 15 pounds per day VOC are described in Section D.14 of this permit for process vents vented to the RTO and D.15 for process vents vented to T79. The applicable emission limits and standards, including the operation, inspection, and maintenance requirements for the RTO control system and its closed - vent system are described in Section D.14 of this permit. The applicable emission limits and standards, including the operation, inspection, and maintenance requirements for the T79 control system and its closed - vent system are described in Section D.15 of this permit.

(b) The Permittee shall cover all in-process tanks associated with the BCM solvent recovery operations having an exposed liquid surface containing VOC greater than 15 pounds per day unless production sampling, maintenance, or inspection procedures require operator access.

(c) The Permittee shall enclose all centrifuges, rotary vacuum filters, and other filters having an exposed liquid surface, where the liquid contains VOC and exerts a total vapor pressure of 0.5 pounds per square inch or more at 20^{O}C.

D.7.2 Exceptions to BCM Process Vent Standards Systems [40 CFR 63.1254, 40 CFR 63.2550, 63.111, 326 IAC 2-2-3]

(a) The Permittee is not required to control emissions from BCM solvent recovery process vents in accordance with Condition D.7.1(a) as long as:

(1) For pharmaceutical operation process vents, the sum of the uncontrolled BCM solvent recovery process vent streams within an individual BCM process does not exceed an annual mass limit of 900 kilograms (2000 pounds) of HAP per 365-day period and the requirements of Condition C.5 of this permit are met;

(2) For miscellaneous organic chemical manufacturing operation process vents:

(A) The sum of the uncontrolled BCM solvent recovery miscellaneous organic chemical manufacturing operation process vents is less than or equal to 10,000 pounds per year for batch process vents; or

(B) Vent flow is < 0.005 standard cubic meter per minute or TRE > 1.9 for continuous process vents.

(b) Pursuant to 326 IAC 2-2-3, VOC BACT for solvent recovery production equipment exhaust systems containing less than 50 ppm HAP or with actual emissions less than 33 lb/day VOC is no controls.

D.7.3 Treatment Unit Requirements [326 IAC 2-2-3 and 40 CFR 63.684]

When a solvent recovery column is used as the final treatment step to treat off-site waste containing VOHAP or VOC equal to or greater than 500 ppmw, the Permittee shall reduce the VOHAP and VOC concentrations of the off-site material to a level that is less than 500 ppmw to satisfy the requirements of 326 IAC 2-2-3 and 40 CFR 63.684(b).

D.7.4 Leak Detection and Repair (LDAR) for Fugitive Emissions [326 IAC 2-2-3, 40 CFR 63.1255, 40 CFR 63.2535(d)]

The LDAR standards that apply to components associated with the BCM solvent recovery operations are described in Sections E.1 and E.2 of this permit.

D.7.5 Heat Exchange System Requirements [326 IAC 2-2-3, 40 CFR 63.1252(c), 40 DRR 63.2490 and Table 10, 40 CFR 63.104]

For each heat exchange system used to cool process equipment used in pharmaceutical manufacturing or miscellaneous organic chemical manufacturing, the Permittee shall either:

(a) Meet the exemption criteria in 40 CFR 63.104(a); or

(b) Monitor and repair according to the requirements of 40 CFR 63.104(b) through 63.104(f).

D.7.6 Startup, Shutdown and Malfunction Requirements [326 IAC 2-2-3, 40 CFR 63.1250(g), 40 CFR 63.697(b)(3), 40 CFR 63.2540 and Table 12]

(a) Offsite Waste MACT [40 CFR 63.697(b)(3)], MON [40 CFR 63.2540 and Table 12] and PSD BACT [326 IAC 2-2-3] SSM Requirements:

(1) The startup, shutdown and malfunction (SSM) Plan requirements are described in Sections D.14.3 and D.15.3.

(2) The SSM requirements for the RTO control system and T79 control system, and associated closed-vent systems, are described in Sections D.14.3 and D.15.3 of this permit, respectively.

(b) Pharmaceutical MACT SSM Requirements [40 CFR 63.1250(g)]

The requirements for SSM events pursuant to the Pharmaceutical MACT are described in Sections D.14.3 and D.15.3 of this permit.

Testing and Monitoring Requirements [326 IAC 2-7-5(1), 326 IAC 2-7-6(1)]

D.7.7 Testing Requirements

(a) The testing requirements for the RTO control system and T79 control system and associated closed-vent systems used to control emissions from the emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

(b) The following streamlined requirements for the solvent recovery columns that treat off-site waste shall satisfy the Offsite Waste MACT standards [40 CFR 63.684(d) and (e)] and the PSD BACT requirements [326 IAC 2-1.1-11]. When off-site waste is being treated according to the treatment standards in Condition D.18, the solvent recovery column requirements in this section do not apply.

(1) An initial and annual demonstration shall be performed within 30 days after first time an owner or operator begins using the treatment process to manage a new off-site material stream equal to or greater than 500 ppmw VOHAP or VOC in accordance with the requirements of either 40 CFR 63.683(b)(1)(ii) or 40 CFR 63.683(b)(2)(ii).

(2) The Permittee shall establish solvent recovery column temperature limits for each off-site waste material stream equal to or greater than 500 ppmw VOHAP or VOC. The Permittee shall monitor the temperature as follows:

(A) The Permittee shall install and operate the temperature CMS in accordance with 40 CFR 63.8(c).

(B) Each CMS shall be in continuous operation when the solvent recovery column is receiving off-site waste streams equal to or greater than 500 ppmw VOHAP or VOC, except for system malfunctions (breakdowns, out of control periods, and associated repairs), maintenance periods, calibration checks and zero (low-level) and high-level calibration drift adjustments.

(C) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period.

D.7.8 Monitoring Requirements

The monitoring requirements for the RTO control system and T79 control system, and associated closed-vent systems, used to control emissions from the applicable emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3), 326 IAC 2-7-19]

D.7.9 Record Keeping and Reporting Requirements

(a) Record Keeping Requirements

(1) RTO Control System and T79 Control System Records - The record keeping requirements for the RTO control system and T79 control system, and associated closed-vent systems, used to control emissions from the emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

(2) LDAR Records - The record keeping requirements for the LDAR standards are described in Sections E.1 and E.2 of this permit.

(3) Process Records – The Permittee shall maintain the following records when using the process vent standard described in Condition D.7.1(c):

(A) Daily rolling annual total HAP emissions;

(B) Number of batches per year for each batch process;

(C) Standard batch uncontrolled and controlled emissions for each process;

(D) Actual uncontrolled and controlled emissions for each nonstandard batch; and

(E) Record whether each batch operated was considered a standard batch.

(4) Solvent Recovery Records – The Permittee shall track how the solvent recovery columns are being utilized in an operating scenario maintained in the On-Site Implementation Log. If a solvent recovery column is used as a treatment column for offsite waste, then the Permittee shall maintain the following records:

(A) Initial and annual demonstration records;

(B) Records of all required CMS data;

(C) Records of each CMS calibration checks;

(D) Maintenance records for each CMS; and

(E) Occurrence/duration records of each CMS malfunction.

(5) Heat Exchange System Records - If demonstrating compliance with Condition D.7.4(b), records of monitoring data and leak information in accordance with 40 CFR 63.104(f)(1).

(6) SSM Records - The Permittee shall maintain SSM records as described in Sections D.14.10(a) and D.15.8(a), as applicable.

(b) Periodic Reporting Requirements

The streamlined quarterly reporting requirements are described in Sections D.14.10(b), D.15.8(b), E.1.3, and E.2.3, which shall satisfy the Pharmaceutical MACT standards [40 CFR 63.1260(g)], Offsite Waste MACT [40 CFR 63.697(b)(3)], MON standards [40 CFR 63.2520(e)], HON standards [40 CFR 63.152(a)] and the PSD BACT requirements [326 IAC 2-1.1-11].

(c) Immediate Reporting Requirements

(1) The immediate reporting requirements for the Offsite Waste MACT standards [40 CFR 63.697(b)(3)] and PSD BACT requirements [326 IAC 2-2-3] are described in Section D.14.10(c)(1) and D.15.8(c)(1).

(2) The immediate reporting requirements for the Pharmaceutical MACT [40 CFR 63.1250(g)] are described in Section D.14.10(c)(2) and D.15.8(c)(2).

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.7.10 Modifications and Construction: Advance Approval of Permit Conditions

(a) The Permittee may modify any existing emission units listed in this section of the permit without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the modified emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

(b) The Permittee may construct and install new emission units of the types described in this D section without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the new emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

Alternative Operating Scenario [326 IAC 2-7-20(d)]

D.7.11 Alternative Operating Scenario

(a) When equipment listed as out of service in this D section is put back into service, the Permittee may comply with one of the following alternative operating scenarios:

(1) When the equipment is vented to T79, the provisions of this D section are applicable; or

(2) When the equipment is vented to the RTO, the provisions of D.6 are applicable.

(b) The Permittee shall keep a log of the scenario under which the BCM production is operating according to 326 IAC 2-7-5(9)(A). A summary of these records shall be included in the annual compliance certification in accordance with 326 IAC 2-7-5(9)(C).

SECTION D.8 BCM and BCM SUPPORT OPERATIONS - INDIVIDUAL DRAIN SYSTEM OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14)]:

The emission units listed below are subject to applicable requirements described or referred to in this D section when they are accepting affected wastewater or Group 1 wastewater. These sumps and the drain systems associated with the sumps are defined as individual drain systems under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Pharmaceutical Production Operations (Pharmaceutical MACT) found at 40 CFR Part 63 Subpart GGG, Miscellaneous Organic Chemical Manufacturing NESHAP (MON) found at 40 CFR Part 63 Subpart FFFF, or NESHAP from Off-site Waste and Recovery Operations (Offsite Waste MACT) found at 40 CFR Part 63 Subpart DD.

Unit ID	Unit Description	Stack/Vent	Nominal Capacity	Control Device
Building T27:				
T27-Sump*	Sump Tank/Lift Station	RTO	2,000 gallons	RTO
Building T31:				
T31-Sump*	Sump	RTO	5,900 gallons	RTO
Building T31A:				
T31A-Sump*	Sump	RTO	300 gallons	RTO
Building T19:				
T19-1-Sump*	Sump	None	NA	None
Building T99:				
T99-Sump*	Sump	RTO	7,500 gallons	RTO
Building T100:				
IDS	Drain system to T100 Tank 48 and/or T79	RTO	NA	RTO
Building T148:				
T148-TK782*	IDS	None	100 gallons	None

* Emission units marked with an asterisk are insignificant activities as defined by 326 IAC 2-7-1(21).

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.8.0 VOC PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 Prevention of Significant Deterioration (PSD), the VOC Best Available Control Technology (BACT) for the BCM and BCM Support Operations – Individual Drain System (IDS) Operations is either to equip the IDS with a water seal or tightly fitting cap or plug or to operate the IDS as a closed system with all vapors routed through a closed-vent system to either a regenerative thermal oxidizer (RTO) or direct incineration (T79 Fume Incinerator) to control VOC emissions to a volumetric concentration of no more than 20 parts per million (ppmv) based on a 24-hour daily average or reduce VOC emissions by a control efficiency of 98% or more.

D.8.1 BCM and BCM Support Individual Drain System (IDS) Standards [40 CFR 63.1256(e), 40 CFR 63.2485, 40 CFR 63.136, 40 CFR 63.689(b), and 326 IAC 2-2-3]

The following streamlined standards for BCM IDSs satisfy the requirements of the Pharmaceutical MACT Standards for individual drain systems [40 CFR 63.1256(e)], MON

Standards for individual drain systems [40 CFR 63.2485], HON Standards for individual drain systems [40 CFR 63.136], Offsite Waste MACT Standards for transfer systems [40 CFR 63.689(b)], and PSD BACT requirements [326 IAC 2-2-3]:

(a) Definition Standards:

An IDS is defined as any stationary system used to convey waste streams or residuals containing HAP or VOC to a waste management unit. A segregated stormwater sewer system, which is a drain and collection system designed and operated for the sole purpose of collecting rainfall-runoff at a facility, and which is segregated from all other individual drain systems, is excluded from this definition. An IDS that is used for the sole purpose of collecting wastewater from spills and leaks, or water from safety showers, condensation and fire deluge systems, is excluded from this definition. For purposes of inspections in Section D.8.1(c), a BCM IDS includes any fixed roof, cover, and/or enclosure, and closed vent system section from the IDS to the inlet of the production building roof fan exhausting to the control device or to the IDS conservation vent.

(b) Operational Standards: The Permittee shall meet the operational standards in (1) or (2) of this section for each operating BCM or BCM Support IDS containing waste equal to or greater than 500 parts per million by weight (ppmw) HAP and/or 500 ppmw VOC:

(1) Operate the IDS as a closed system with all vapors routed through a closed-vent system to a control device:

(A) The Permittee shall cover the openings of each operating IDS containing at all times during use except when it is necessary to use the opening for sampling or removal of material, or for equipment inspection, maintenance, or repair; and

(B) Except as otherwise provided in this Condition, the emission limits and standards for each operating IDS that is operated as a closed vent system with all vapor routed to a control device are described in Section D.14 for emission units controlled by the RTO control system and described in Section D.15 for emission units controlled by the T79 fume incinerator control system; or

(2) Equip the IDS with a water seal or tightly fitting cap or plug:

(A) For each IDS equipped with a water seal, ensure that the water seal is maintained. For example, a flow-monitoring device indicating positive flow from a main to a branch water line supplying a trap or water being continuously dripped into the trap by a hose could be used to verify flow of water to the trap. Visual observation is also an acceptable alternative.

(B) For each IDS equipped with a water seal, either extend the pipe discharging the wastewater below the liquid surface in the water seal of the receiving drain, or install a flexible shield (or other enclosure which restricts wind motion across the open area between the pipe and the drain) that encloses the space between the pipe discharging the wastewater to the drain receiving the wastewater (if such a space exists).

(c) Inspection Standards:

(1) For each IDS containing waste equal to or greater than 500 ppmw HAP and/or 500 ppmw VOC being operated as a closed system with all vapors routed through a closed-vent system to a control device, the Permittee shall perform the following visual inspections and, when necessary, comply with the following

repair requirements:

(A) Initial and semiannual visual inspections of each IDS for improper work practices such as leaving open any access hatch or other opening when such hatch or opening is not in use for sampling or removal, or for equipment inspection, maintenance, or repair.

(B) Initial and semiannual visual inspections of each IDS for control equipment failures such as a cracked or broken joint, lid, cover, or door.

(C) Initiate repair of any leak no later than 5 calendar days after identification, and complete repair within 15 days after identification, except for the following allowances for delay of repair:

(i) Repair is technically infeasible without a shutdown;

(ii) Emissions resulting from immediate repair would be greater than the emissions likely to result from delay of repair. In such cases, repair shall occur by the end of the next shutdown;

(iii) Equipment is emptied or is no longer used to treat waste equal to or greater than 500 ppmw HAP and/or VOC; or

(iv) Unavailability of parts beyond the control of the Permittee.

(2) For each IDS containing waste equal to or greater than 500 ppmw HAP and/or 500 ppmw VOC being operated as a closed system with all vapors routed through a closed-vent system to a control device, the Permittee shall perform the following additional inspections and repair requirements (when necessary) on the sections of the closed-vent system not operated under negative pressure:

(A) Initial one-time Method 21 inspection on the cover of each IDS. For new equipment, this inspection shall be performed within 150 days upon startup of the new equipment.

(B) Semiannual visual inspections for visible, audible, or olfactory indications of leaks.

(C) Initiate repair of any leak no later than 5 calendar days after identification, and complete repair within 15 days after identification, except for the following situations:

(i) Delay of repair is allowed if the repair is technically infeasible without a shutdown; or

(ii) Delay of repair is allowed if the emissions resulting from immediate repair would be greater than the emissions likely to result from delay of repair.

(3) For each IDS equipped with a water seal or tightly fitting cap or plug, the Permittee is not subject to the requirements in (c)(1) and (c)(2) of this section, but instead shall comply with the following inspection and repair requirements.

(A) For IDS equipped with a water seal, ensure that the water seal is maintained. For example, a flow-monitoring device indicating positive flow from a main to a branch water line supplying a trap or water being continuously dripped into the trap by a hose could be used to verify flow of water to the trap. Visual observation is also an acceptable alternative.

(B) Each IDS equipped with a tightly fitting cap or plug, visual inspections shall be conducted initially and semiannually thereafter to ensure caps or plugs are in place and that there are no gaps, cracks, or other holes in the cap or plug.

(C) Initiate repair of any gap, hole, or crack no later than 5 calendar days after identification, and complete repair within 15 days after identification, except for the following situations:

(i) Delay of repair is allowed if the repair is technically infeasible without a shutdown; or

(ii) Delay of repair is allowed if the emissions resulting from immediate repair would be greater than the emissions likely to result from delay of repair.

(4) IDSs containing waste equal to or greater than 500 ppmw HAP and/or 500 ppmw VOC that are unsafe or difficult to inspect are not subject to the requirements of D.8.1 (b)(2) and D.8.1(c). Permittee must have a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times (for unsafe inspections) or at least once every 5 years (for difficult inspections).

D.8.2 Startup, Shutdown and Malfunction Requirements [40 CFR 63.1250(g), 40 CFR 63.697(b)(3), 40 CFR 63.2540 and Table 12,326 IAC 2-2-3]

(a) MON [40 CFR 63.2540 and Table 12], Offsite Waste MACT [40 CFR 63.697(b)(3)] and PSD BACT [326 IAC 2-2-3] SSM Requirements:

(1) The startup, shutdown and malfunction (SSM) Plan requirements are described in Sections D.14.3 and D.15.3.

(2) The SSM requirements for the RTO control system or T79 control system, and associated closed-vent systems, are described in Sections D.14.3 and D.15.3 of this permit, respectively.

(b) Pharmaceutical MACT SSM Requirements [40 CFR 63.1250(g)]

The requirements for SSM events pursuant to the Pharmaceutical MACT are described in Sections D.14.3 and D.15.3 of this permit.

Testing and Monitoring Requirements [326 IAC 2-7-5(1), 326 IAC 2-7-6(1)]

D.8.3 Testing Requirements

(a) The testing requirements for the RTO control system and T79 fume incinerator control system, and associated closed-vent systems, used to control emissions from the emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

(b) The Permittee shall utilize engineering knowledge of the waste stream constituents such as material balances to demonstrate the average VOHAP and/or VOC concentration is less than 500 ppmw for each BCM IDS that is not controlled in accordance with D.8.3 (a).

D.8.4 Monitoring Requirements

The monitoring requirements for the RTO control system and T79 fume incinerator control system, and associated closed-vent systems, used to control emissions from the emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

Record Keeping and Reporting Requirements [326 IAC 2-2, 2-7-10.5]

D.8.5 Record Keeping and Reporting Requirements

(a) Record Keeping Requirements

(1) RTO Control System and T79 Control System Records - The record keeping requirements for the RTO control system and T79 fume incinerator control system, and associated closed-vent systems that control emissions from the emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

(2) Inspection and Maintenance Records - The Permittee shall maintain the following records:

(A) Identification and explanation of all BCM IDS covers unsafe to inspect, including a plan for when these IDS covers will be inspected;

(B) Identification and explanation of all BCM IDS covers difficult to inspect, including a plan for when these IDS covers will be inspected;

(C) Visual inspection log of BCM IDSs, including the date of inspection and a statement that no leaks were detected, if applicable;

(D) One-time Method 21 inspection log of each BCM IDS cover, including the date of inspection and a statement that no leaks were detected, if applicable;

(E) Information on each BCM IDS cover inspection during which a leak is detected, including as applicable:

(i) Instrument identification numbers, operator name or initials, and identification of the equipment;

(ii) Date the leak was detected and the date of the first attempt to repair the leak;

(iii) Maximum instrument reading measured after leak is successfully repaired or determined to be nonrepairable;

(iv) Reason for any delay of repair if leak not repaired within 15 calendar days after discovery of the leak;

(v) Name, initials, or other form of identification of person whose decision it was that repair could not be effected without a shutdown;

(vi) Expected date of successful repair of leak if leak not required within 15 calendar days after discovery of leak;

(vii) Dates of shutdowns that occur while the equipment is unrepaired; and

(viii) Date of successful repair of the leak.

(F) Documentation of a decision to use a delay of repair due to unavailability of parts shall include a description of the failure, the reason additional time was necessary (including a statement of why replacement parts were not kept onsite and when delivery from the manufacturer is scheduled), and the date when the repair was completed.

(3) SSM Records - The Permittee shall maintain SSM records as described in Sections D.14.10(a) and D.15.8(a), as applicable.

(4) IDS Waste Stream Records - The Permittee shall identify each IDS not controlled by the RTO or T79 control system and maintain documentation to support the average waste stream constituents of VOHAP and/or VOC concentration are less than 500 ppmw.

(b) Periodic Reporting Requirements

(1) The streamlined quarterly reporting requirements are described in Sections D.14.10(b), D.15.8(b), E.1.3, and E.2.3, which shall satisfy the Pharmaceutical MACT standards [40 CFR 63.1260(g)], Offsite Waste MACT [40 CFR 63.697(b)(3)], and the PSD BACT requirements [326 IAC 2-1.1-11].

(2) The streamlined quarterly report must include inspections conducted during which a leak was detected.

(c) Immediate Reporting Requirements

(1) The immediate reporting requirements for the Offsite Waste MACT standards [40 CFR 63.697(b)(3)] and PSD BACT requirements [326 IAC 2-2-3] are described in Section D.14.10(c)(1) and D.15.8(c)(1).

(2) The immediate reporting requirements for the Pharmaceutical MACT [40 CFR 63.1250(g)] are described in Section D.14.10(c)(2) and D.15.8(2).

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.8.6 Modifications and Construction: Advance Approval of Permit Conditions

(a) The Permittee may modify any existing emission units listed in this section of the permit without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the modified emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

(b) The Permittee may construct and install new emission units of the types described in this D section without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the new emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

Non-Applicability of Requirements

D.8.7 Non-Applicability Determinations [326 IAC 8-5-3]

The control requirements of the Synthesized Pharmaceutical RACT rules (326 IAC 8-5-3) do not apply to the individual drain systems identified above in the Facility Description section because the potential to emit VOC emissions from each facility is less than the rule applicability threshold level of 6.8 kilograms per day (15 pounds per day).

SECTION D.9 BCM and BCM SUPPORT OPERATIONS – SOLVENT STORAGE TANK OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14]:

Emission Unit ID	Emission Unit Description**	Stack/Vent	Nominal Capacity	Control Device
Building T143 – Tank Module:				
T143-TK01	Solvent Tank	T79	38,245 gal	T79
T143-TK03	Solvent Tank	T79	38,245 gal	T79
T143-TK05	Solvent Tank	T79	38,245 gal	T79
T143-TK07	Solvent Tank	T79	38,245 gal	T79
T143-TK09	Solvent Tank	T79	38,245 gal	T79
T143-TK11	Solvent Tank	T79	38,245 gal	T79
T143-TK12	Solvent Tank	T79	18,500 gal	T79
T143-TK17	Solvent Tank	T79	18,500 gal	T79
T143-TK18	Solvent Tank	T79	18,500 gal	T79
T143-TK19	Solvent Tank	T79	18,500 gal	T79
T143-TK20	Solvent Tank	T79	18,500 gal	T79
T143-TK21	Solvent Tank	T79	18,500 gal	T79
T143-TK22	Solvent Tank	T79	18,500 gal	T79
T143-TK23	Solvent Tank	T79	18,500 gal	T79
T143-TK24	Solvent Tank	T79	18,500 gal	T79
Building T145 – Tank Module:				
T145-TK25	Solvent Tank	T79*	18,900 gal	T79*
T145-TK26	Solvent Tank	T79*	18,900 gal	T79*
T145-TK27	Solvent Tank	T79*	18,900 gal	T79*
T145-TK28	Solvent Tank	T79*	18,900 gal	T79*
T145-TK29	Solvent Tank	T79*	18,900 gal	T79*
T145-TK30	Solvent Tank	T79*	18,900 gal	T79*
T145-TK31	Solvent Tank	T79*	18,900 gal	T79*
T145-TK32	Solvent Tank	T79*	18,900 gal	T79*
T145-TK33	Solvent Tank	T79*	18,900 gal	T79*
T145-TK34	Solvent Tank	T79*	18,900 gal	T79*
T145-TK35	Solvent Tank	T79*	18,900 gal	T79*
T145-TK36	Solvent Tank	T79*	18,900 gal	T79*
T145-TK37	Solvent Tank	T79*	18,900 gal	T79*
T145-TK38	Solvent Tank	T79*	18,900 gal	T79*
T145-TK39	Solvent Tank	T79*	18,900 gal	T79*
T145-TK40	Solvent Tank	T79	18,900 gal	T79
T145-TK41	Solvent Tank	T79	18,900 gal	T79
T145-TK42	Solvent Tank	T79	18,900 gal	T79

T145-TK43	Solvent Tank	T79	18,900 gal	T79
T145-TK44	Solvent Tank	T79	18,900 gal	T79
T145-TK45	Solvent Tank	T79	18,900 gal	T79
T145-TK46	Solvent Tank	T79	18,900 gal	T79
T145-TK47	Solvent Tank	T79	18,900 gal	T79
T145-TK48	Solvent Tank	T79	18,900 gal	T79
T145-TK49	20% Caustic Storage	Atmosphere	18,900 gal	Atmosphere
T145-TK50	Solvent Tank	T79	10,000 gal	T79
T145-TK51	Solvent Tank	T79	10,000 gal	T79
T145-TK52	Solvent Tank	T79	10,000 gal	T79
T145-TK53	Solvent Tank	T79	10,000 gal	T79
T145-TK54	Solvent Tank	T79	10,000 gal	T79
T145-TK55	Solvent Tank	T79	10,000 gal	T79
T145-TK56	Solvent Tank	T79	10,000 gal	T79
T145-TK57	Solvent Tank	T79	10,000 gal	T79
T145-TK58	Solvent Tank	T79	10,000 gal	T79
T145-TK59	Solvent Tank	T79	10,000 gal	T79
Building T146 – Tank Module:				
T146-TK01	Solvent Tank	RTO	19,000 gal	RTO
T146-TK02	Solvent Tank	RTO	19,000 gal	RTO
T146-TK03	Solvent Tank	RTO	19,000 gal	RTO
T146-TK04	Solvent Tank	RTO	19,000 gal	RTO
T146-TK05	Solvent Tank	RTO	19,000 gal	RTO
T146-TK06	Solvent Tank	RTO	19,000 gal	RTO
T146-TK07	Solvent Tank	RTO	19,000 gal	RTO
T146-TK08	Solvent Tank	RTO	19,000 gal	RTO
T146-TK09	Solvent Tank	RTO	19,000 gal	RTO
T146-TK10	Solvent Tank	RTO	19,000 gal	RTO
T146-TK13	Solvent Tank	RTO	19,000 gal	RTO
T146-TK14	Solvent Tank	RTO	19,000 gal	RTO
T146-TK15	Solvent Tank	RTO	19,000 gal	RTO
T146-TK16	Solvent Tank	RTO	19,000 gal	RTO
T146-TK17	Solvent Tank	RTO	19,000 gal	RTO
T146-TK19	Solvent Tank	RTO	19,000 gal	RTO
T146-TK22	Solvent Tank	RTO	19,000 gal	RTO

* This equipment is currently not in service.
** This equipment may store solvent or waste.
(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.9.0 VOC PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 Prevention of Significant Deterioration (PSD), the VOC Best Available Control Technology (BACT) for the BCM and BCM Support Operations – Solvent Storage Tanks is to route emissions to either a regenerative thermal oxidizer (RTO) or direct incineration (T79 Fume Incinerator) to control VOC emissions to a volumetric concentration of no more than 20 parts per million (ppmv) based on a 24-hour daily average or reduce VOC emissions by a control efficiency of 98% or more.

D.9.1 Standards for BCM Solvent Storage Tanks [40 CFR 63.1253(c)(1)(i), 40 CFR 63.2470, 40 CFR 63.101, 40 CFR 60.112b and 60.113b, 326 IAC 8-5-3, and 326 IAC 2-2]

The following streamlined standards for the BCM solvent storage tanks satisfy the requirements of the Pharmaceutical MACT Standards for storage tanks [40 CFR 63.1253(c)(1)(i)], Miscellaneous Organic National Emission Standards for Hazardous Air Pollutants (MON) Standards for storage tanks [40 CFR 63.2470], NESHAP from the Synthetic Organic Chemical Manufacturing Industry (HON) Standards for storage tanks [40 CFR 63.101], Volatile Organic Liquid Storage Vessel Standards [40 CFR 60.112b and 60.113b], PSD BACT requirements [326 IAC 2-2-3] and RACT requirements for synthesized pharmaceutical manufacturing operations [326 IAC 8-5-3]:

(a) Definition Standards:

(1) A BCM solvent storage tank is defined as any vessel designed to store raw material feedstocks or used solvent to be recovered that contain VOCs and/or VOHAP. Pressure vessels greater than 204.9 kPa without emissions to the atmosphere, vessels attached to motor vehicles, or vessels used to store beverage alcohol are not BCM solvent storage tanks. For purposes of inspections in Section D.9.1(c), a BCM solvent storage tank includes any fixed roof, cover, and/or enclosure, and closed vent system section from the BCM solvent storage tank to the inlet of the production building roof fan exhausting to the control device or to the BCM solvent storage tank conservation vent.

(b) Operational Standards:

(1) Except as otherwise provided in Condition D.9.2, the emission limits and standards for each operating BCM solvent storage tank are described in Section D.14 for equipment controlled by the RTO control system and described in Section D.15 for equipment controlled by the T79 fume incinerator control system.

(2) Solvent storage tanks shall be of fixed-roof design.

(c) Inspection Standards:

On each fixed roof BCM solvent storage tank not operated under negative pressure and not subject to LDAR, the Permittee shall:

(1) Conduct a one-time Method 21 inspection within 150 days upon startup;

(2) Conduct semiannual visual inspections for visible, audible, or olfactory indications of leaks;

(3) Initiate repair of any leak on a BCM solvent storage tank no later than 5 calendar days after identification, and complete the repair within 15 days after identification, unless the repair is technically infeasible without a shutdown of an operation or process or it is determined that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay or repair. Repairs delayed due to either of these causes shall be completed by the

end of the next shutdown; and

(4) If applicable, include in a description of any equipment that is unsafe or difficult to inspect and a plan for when the equipment may be inspected.

D.9.2 Exceptions to Standards for BCM Solvent Storage Tanks [40 CFR 63.1253, 40 CFR 63.2505(b)(9), 326 IAC 2-2]

(a) The BCM solvent storage tanks are not subject to the standards established in Condition D.9.1 (b) during periods of planned routine maintenance, as long as the planned routine maintenance activities do not exceed 240 hours per 365 day period. In accordance with 40 CFR 63.1253(e) and 40 CFR 63.2505(b)(9), the Permittee may submit an application requesting an extension to a total of 360 hours in any 365-day period. The application must explain why the extension is needed, specify that no affected wastewater will be added to tank between the time the 240-hour limit is exceeded and the control device is again operational, and it must be submitted at least 60 days before the 240-hour limit will be exceeded. Wastewater tanks shall not be sparged with air or other gases without an operational control device.

(b) BCM solvent storage tanks storing VOC/VOHAP with a vapor pressure less than 3.5 kPa are not subject to the requirements of D.9.1 (b)(1) and (c).

The RTO control standards for halogenated vent streams from miscellaneous organic chemical manufacturing process units are included as an Alternative Operating Scenario in Condition D.9.9(b) of this permit and are excluded from the standards in Condition D.9.1.

D.9.3 Leak Detection and Repair (LDAR) Standards [40 CFR 63.1255, 40 CFR 63.2535(d), 326 IAC 2-2]

The LDAR standards that apply to components associated with the emission units listed in this section are described in Section E.1 of this permit.

D.9.4 Startup, Shutdown and Malfunction Requirements [40 CFR 60.8(c), 40 CFR 63.1250(g), 40 CFR 63.2540 and Table 12, 326 IAC 2-2-3]

(a) MON [40 CFR 63.2540 and Table 12], Volatile Organic Liquid Storage Vessel Standards [40 CFR 60.7, 40 CFR 60.8(c)] and PSD BACT SSM Requirements [326 IAC 2-2-3]

(1) The startup, shutdown and malfunction (SSM) Plan requirements are described in Sections D.14.3 and D.15.3.

(2) The SSM requirements for the RTO control system or T79 control system, are described in Sections D.14.3 and D.15.3 of this permit, respectively.

(b) Pharmaceutical MACT SSM Requirements [40 CFR 63.1250(g)]

The requirements for SSM events pursuant to the Pharmaceutical MACT are described in Section D.14.3 and D.15.3 of this permit.

Testing and Monitoring Requirements [326 IAC 2-7-5(1), 326 IAC 2-7-6(1)]

D.9.5 Testing Requirements

The testing requirements for the RTO control system and T79 fume incinerator control system, and associated closed-vent systems that control emissions from the emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

D.9.6 Monitoring Requirements

The monitoring requirements for the RTO control system and T79 fume incinerator control system, and associated closed-vent systems, used to control emissions from the emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.9.7 Record Keeping and Reporting Requirements

(a) Record Keeping Requirements

(1) The record keeping requirements for the RTO control system, T79 fume incinerator control system, and associated closed-vent systems that control emissions from the emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

(2) Inspection and Maintenance Records - The Permittee shall maintain the following streamlined records:

(A) Identification and explanation of all BCM solvent storage tanks unsafe or difficult to inspect, including a plan for when these tanks will be inspected;

(B) Reserved;

(C) Visual inspection log of BCM solvent storage tanks, including the date of inspection and a statement that no leaks were detected, if applicable;

(D) One-time Method 21 inspection log of each BCM solvent storage tank, including the date of inspection and a statement that no leaks were detected, if applicable;

(E) Information on each BCM solvent storage tank inspection during which a leak is detected, including:

(i) Instrument identification numbers, operator name or initials, and identification of the equipment;

(ii) Date the leak was detected and the date of the first attempt to repair the leak;

(iii) Maximum instrument reading measured after leak is successfully repaired or determined to be nonrepairable;

(iv) Reason for any delay of repair if leak not repaired within 15 calendar days after discovery of the leak;

(v) Name, initials, or other form of identification of person whose decision it was that repair could not be affected without a shutdown;

(vi) Expected date of successful repair of leak if leak not required within 15 calendar days after discovery of leak;

(vii) Dates of shutdowns that occur while the equipment is unrepaired; and

(viii) Date of successful repair of the leak.

(F) Periods of planned routine maintenance; and

(G) Records of BCM solvent storage tanks storing VOC/VOHAP with a vapor pressure less than 3.5 kPa.

(3) SSM Records - The SSM record keeping requirements are described in Sections D.14.10(a) and D.15.8(a).

(4) LDAR Records - The record keeping requirements for the LDAR standards are described in Section E.1 of this permit.

(5) Storage Tank Records - Pursuant to New Source Performance Standard for Volatile Organic Liquid Storage Vessels (40 CFR 60.116b(a) and (b)), the Permittee shall, for the life of the source, keep readily accessible records of the dimensions and capacity for each BCM solvent storage tank.

(6) Operating Plan – Pursuant to 40 CFR 60.115b(c)(1), the Permittee shall, for the life of the control equipment, maintain a copy of the operating plan required by 40 CFR 60.113b for all tanks with design capacity greater than or equal to 75 cubic meters.

(b) Periodic Reporting Requirements

(1) The streamlined quarterly reporting requirements are described in Sections D.14.10(b), D.15.8(b), E.1.3, and E.2.3, which shall satisfy the Pharmaceutical MACT [40 CFR 63.1260(g)] , MON standards [40 CFR 63.2520(e)], HON standards [40 CFR 63.152(a)], and PSD BACT requirements [326 IAC 2-1.1-11].

(2) The streamlined quarterly report must also include:

(A) Semiannual visual inspections conducted during which a leak was detected; and

(B) Periods of planned routine maintenance.

(c) Immediate Reporting Requirements

(1) The immediate reporting requirements for the PSD BACT requirements [326 IAC 2-2-3] are described in Section D.14.10(c)(1).

(2) The immediate reporting requirements for the Pharmaceutical MACT [40 CFR 63.1250(g)] are described in Section D.14.10(c)(2).

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.9.8 Modifications and Construction: Advance Approval of Permit Conditions

(a) The Permittee may modify any existing emission units listed in this section of the permit without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the modified emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

(b) The Permittee may construct and install new emission units of the types described in this D section without obtaining a source modification approval (otherwise required by 326

IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by and 326 IAC 2-2), provided the new emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

Alternative Operating Scenario [326 IAC 2-7-20(d)]

D.9.9 Alternative Operating Scenario

(a) For tanks listed in this D section, the Permittee may comply with one of the following alternative operating scenarios:

(1) The provisions of this D section are applicable when the tank is storing solvent;

(2) The provisions of D.10 are applicable when the tank is storing waste.

(b) The Permittee may elect to operate a halogenated vent stream (≥ 0.45 kg/hr halogen atoms in organic compounds) from a Group 1 storage tank(s), in which case the requirements for hydrogen halide and halogen emissions under this scenario are described in Condition D.14.12(a) for the RTOs and D.15.1 for T79.

(c) The Permittee shall keep log of the scenario under which the tank is operating according to 326 IAC 2-7-5(9)(A). A summary of these records shall be included in the annual compliance certification.

SECTION D.10 BCM and BCM SUPPORT OPERATIONS - WASTE TANK OPERATION CONDITIONS

Emissions Unit Description[326 IAC 2-7-5(14)]:

Emission Unit ID	Emission Unit Description ***	Stack/Vent	Nominal Capacity	Control Device
Building T27:				
T27-TK53-10*	Waste Tank	RTO	500 gal	RTO
Building T29:				
T29-TK7902*	Waste Tank	RTO	1000 gal	RTO
Building T31:				
T31-TK609*	Waste Tank	RTO	100 gal	RTO
T31-TK669*	Waste Tank	RTO	100 gal	RTO
Building T31A:				
T31A-TK451K*	Waste Tank	RTO	100 gal	RTO
T31A-TK688*	Waste Tank	RTO	125 gal	RTO
Building T69:				
T69-TK1*	Waste Tank	None	106 gal	None
Building T99:				
T99-TK-1B*	Waste Tank	RTO	100 gal	RTO
T99-TK-3B*	Waste Tank	RTO	210 gal	RTO
T99-TK-7B*	Waste Tank	RTO	210 gal	RTO
T99-TK9DB*	Waste Tank	RTO	10 gal	RTO
T99-TK-D45A*	Waste Tank	RTO	100 gal	RTO
Building T100:				
T100-TK-10A*	Waste Tank	RTO	200 gal	RTO
T100-TK-48*	Waste Tank	RTO	3300 gal	RTO
Building T79:				
T79-TK301*	Equalization Tank	T79 - 321 stream	50,000 gal	T79 Incinerator
T79-TK302*	Equalization Tank	T79 - 321 stream	50,000 gal	T79 Incinerator
T79-TK303*	Neutralization Tank	T79 - 321 stream	5,000 gal	T79 Incinerator
Building T102-RTOs				
T102-TK102*****	90 day RCRA Tank	RTO	700 gal	RTO
Tank Module Building T140:				
T140-TK3122	Waste Tank	T79	38,425 gal	T79
T140-TK3123	Waste Tank	T79	38,425 gal	T79
T140-TK3124	Waste Tank	T79	38,425 gal	T79
T140-TK3125	Waste Tank	T79	38,425 gal	T79
T140-TK3126	Waste Tank	T79	38,425 gal	T79
T140-TK3227*	Waste Tank	T79 -324 stream	18,130 gal	T79
T140-TK3228*	Waste Tank	T79 - 324 stream	18,130 gal	T79
T140-TK3229*	Waste Tank	T79 - 324 stream	500 gal	T79
Tank Module Building T142:				

T142-TK01	Waste Tank	T79 or RTO**	19,500 gal	T79 or RTO
T142-TK02	Waste Tank	T79 or RTO**	19,500 gal	T79 or RTO
T142-TK03	Waste Tank	T79 or RTO**	19,500 gal	T79 or RTO
T142-TK04	Waste Tank	T79 or RTO**	19,500 gal	T79 or RTO
T142-TK05	Waste Tank	T79 or RTO**	19,500 gal	T79 or RTO
T142-TK06	Waste Tank	T79 or RTO**	19,500 gal	T79 or RTO
T142-TK07	Waste Tank	T79 or RTO**	19,500 gal	T79 or RTO
T142-TK08	Waste Tank	T79 or RTO**	19,500 gal	T79 or RTO
T142-TK09	Waste Tank	T79 or RTO**	19,500 gal	T79 or RTO
T142-TK10	Waste Tank	T79 or RTO**	19,500 gal	T79 or RTO
T142-TK11	Waste Tank	T79 or RTO**	19,500 gal	T79 or RTO
T142-TK12	Waste Tank	T79 or RTO**	19,500 gal	T79 or RTO
T142-TK56*	Knock Out Pot	T79	32 gal	T79
Tank Module Building T143:				
T143-TK02*	Waste Tank	T79 - 325 stream	19,500 gal	T79
T143-TK06*	Waste Tank	T79 - 325 stream	19,500 gal	T79
T143-TK10*	Waste Tank	T79 - 325 stream	19,500 gal	T79
T143-TK13	Waste Tank	T79	18,500 gal	T79
T143-TK14	Waste Tank	T79	18,500 gal	T79
T143-TK15*	Waste Tank	T79 - 325 stream	18,500 gal	T79
T143-TK16	Waste Tank	T79	18,500 gal	T79
T143-TK56*	Knock Out Pot	T79	45 gal	T79
Tank Module Building T145:				
T145-TK76*	Knock Out Pot	T79	45 gal	T79 Incinerator
T145-TK77*	Knock Out Pot	T79 or RTO**	45 gal	T79 or RTO**
Tank Module Building T146:				
T146-TK23	Waste Tank	RTO	19,000 gal	RTO
T146-TK24	Waste Tank	RTO	19,000 gal	RTO
T146-TK11*	Waste Tank	RTO	19,000 gal	RTO
T146-TK18	Waste Tank	RTO	19,000 gal	RTO
T146-TK20*	Waste Tank	RTO	19,000 gal	RTO
T146-TK21*	Waste Tank	RTO	19,000 gal	RTO
T146-TK12	Waste Tank	RTO	19,000 gal	RTO
T146-TK56*	Knock Out Pot	RTO	45 gal	RTO
T48 Tank Farm:				
T48-TK3207*	Waste Tank	T79 - 324 stream	102,759 gal	T79
T48-TK3208*	Waste Tank	T79 - 324 stream	102,726 gal	T79

T48-TK3209*	Waste Tank	T79 - 324 stream	102,759 gal	T79
T48-TK3211*	Waste Tank	T79 - 324 stream	260,049 gal	T79
T48-TK3212*	Waste Tank	T79 - 324 stream	260,650 gal	T79

* Emission units marked with an asterisk are insignificant activities as defined by 326 IAC 2-7-1(21).
** This equipment is currently not in service; however, this equipment shall be tied into either the RTO control system or the T79 control system upon startup.
*** This equipment may store solvent or waste.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.10.0 VOC PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 Prevention of Significant Deterioration (PSD), the VOC Best Available Control Technology (BACT) for the BCM Support Operations – Waste Tanks is to route emissions to either a regenerative thermal oxidizer (RTO) or direct incineration (T79 Fume Incinerator) to control VOC emissions to a volumetric concentration of no more than 20 parts per million (ppmv) based on a 24-hour daily average or reduce VOC emissions by a control efficiency of 98% or more.

D.10.1 Standards for BCM Waste Storage Tanks [40 CFR 63.1256(b), 40 CFR 63.2485, 40 CFR 63.133, 40 CFR 63.685, 40 CFR 60.110b, 326 IAC 2-2-3, and 326 IAC 8-5-3]

The following streamlined standards for BCM waste storage tanks satisfy the requirements of the Pharmaceutical MACT Standards for wastewater tanks [40 CFR 63.1256(b)], MON Standards for wastewater tanks [40 CFR 63.2485], HON Standards for wastewater tanks [40 CFR 63.133], Volatile Organic Liquid Storage Vessel Standards [40 CFR 60.110b], Offsite Waste MACT Standards for waste tanks [40 CFR 63.685], PSD BACT requirements [326 IAC 2-2-3], and RACT requirements for synthesized pharmaceutical manufacturing operations [326 IAC 8-5-3]:

(a) Definition Standards:

(1) A BCM waste storage tank is defined as any waste management unit that is designed to contain an accumulation of waste material or residual containing VOCs and/or VOHAP. Pressure vessels greater than 204.9 kPa without emissions to the atmosphere or vessels attached to motor vehicles are not BCM waste storage tanks. For purposes of inspections in Section D.10.1(c), BCM waste storage tank includes any fixed roof, cover, and/or enclosure, and closed vent system section from the BCM waste storage tank to the inlet of the production building roof fan exhausting to the control device or to the BCM waste storage tank conservation vent.

(b) Operational Standards:

(1) Except as otherwise provided in this Condition and in Condition D.10.2, the emission limits and standards for each operating BCM waste storage tank are described in Section D.14 for equipment controlled by the RTO control system and described in Section D.15 for equipment controlled by the T79 fume incinerator control system.

(2) BCM waste storage tanks shall be of fixed-roof design.

(c) Inspection Standards:

(1) On each fixed roof BCM waste storage tank not operated under negative pressure and not subject to LDAR, the Permittee shall:

(A) Conduct a one-time Method 21 inspection within 150 days upon startup;

(B) Conduct semiannual visual inspections for visible, audible, or olfactory indications of leaks;

(C) Initiate repair of any leak on a BCM waste storage tank no later than 5 calendar days after identification, and complete the repair within 15 days after identification unless the delay of repair applies in accordance with 40 CFR 63.1258(h)(5) and 40 CFR 63.148; and

(D) If applicable, include in a description of any equipment that is unsafe or difficult to inspect and a plan for when the equipment may be inspected.

(2) For the fixed roof and all openings of each BCM waste storage tank the Permittee shall:

(A) Conduct semiannual visual inspections for improper work practices and control equipment failures;

(B) Make first efforts at repairing improper work practices and/or control equipment failures no later than 5 calendar days after identification, and repair shall be completed within 45 calendar days after identification;

(C) Document a decision to utilize a repair extension if a failure cannote be repaired within 45 calendar days and if the tank cannot be emptied within 45 calendar days. Up to two 30 extensions of up to 30 additional calendar days may be utilized.

D.10.2 Exceptions to Standards for BCM Waste Storage Tanks [40 CFR 63.1256(b), 40 CFR 632485(d)(4), 40 CFR 63.693(b)(3)(i), 40 CFR 60.110b, 326 IAC 8-5-3, 326 IAC 2-7-24, and 326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2, 40 CFR 63.1256(b)(10), 40 CFR 63.2485(d)(4) and 40 CFR 63.693(b)(3)(i), the BCM waste storage tanks are not subject to the standards established in Condition D.10.1 (b) during periods of planned routine maintenance on the control device, as long as the control device's planned routine maintenance activities do not exceed 240 hours per 365 day period. In accordance with 40 CFR 63.1256(b)(10) and 40 CFR 63.2485(d)(4), the Permittee may submit an application requesting an extension to a total of 360 hours in any 365-day period. The application must explain why the extension is needed, specify that no affected wastewater will be added to tank between the time the 240-hour limit is exceeded and the control device is again operational, and it must be submitted at least 60 days before the 240-hour limit will be exceeded. Wastewater tanks shall not be sparged with air or other gases without an operational control device and shall not be loaded during periods of planned routine maintenance on the control device.

(b) BCM waste storage tanks storing VOC/VOHAP with a vapor pressure less than 3.5 kPa in which the contents are not heated, treated by exothermic reaction or sparged are not subject to the requirements of D.10.1 (b)(1) and (c).

D.10.3 Leak Detection and Repair (LDAR) Standards [40 CFR Part 61 Subpart V and 326 IAC 2-2-3]

The LDAR standards that apply to components associated with the BCM waste storage tanks are described in Section E.2 of this permit.

D.10.4 Startup, Shutdown and Malfunction Requirements [40 CFR 60.7, 40 CFR 60.8(c), 40 CFR 63.1250(g), 40 CFR 63.2540 and Table 12, 40 CFR 63.697(b)(3), and 326 IAC 2-2-3]

(a) MON [40 CFR 63.2540 and Table 12], Volatile Organic Liquid Storage Vessel Standards [40 CFR 60.7, 40 CFR 60.8(c)], Offsite Waste MACT [40 CFR 63.697(b)(3)], and PSD BACT [326 IAC 2-2-3] SSM Requirements.

(1) The startup, shutdown and malfunction (SSM) Plan requirements are described in Sections D.14.3 and D.15.3.

(2) The SSM requirements for the RTO control system or T79 control system, and associated closed-vent systems, are described in Sections D.14.3 and D.15.3, respectively.

(b) Pharmaceutical MACT SSM Requirements [40 CFR 63.1250(g)]

The requirements for SSM events pursuant to the Pharmaceutical MACT are described in Section D.14.3 and D.15.3 of this permit.

Testing and Monitoring Requirements [326 IAC 2-7-5(1), 326 IAC 2-7-6(1)]

D.10.5 Testing Requirements

The testing requirements for the RTO control system and T79 fume incinerator control system, and associated closed-vent systems, used to control emissions from the emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

D.10.6 Monitoring Requirements

The monitoring requirements for the RTO control system and T79 fume incinerator control system, and associated closed-vent systems, used to control emissions from the emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

Record Keeping and Reporting Requirements [326 IAC 2-7-10.5, 326 IAC 2-2, 40 CFR 60.7, 40 CFR Part 60 Subpart Kb, 40 CFR Part 63 Subpart DD, 40 CFR 63 Subpart GGG, 40 CFR Part 63 Subpart FFFF, 40 CFR Part 63 Subparts F and G]

D.10.7 Record Keeping and Reporting Requirements

(a) Record Keeping Requirements

(1) RTO Control System and T79 Control System Records - The record keeping requirements for the RTO control system and T79 fume incinerator control system used to control emissions from these emission units are described in Sections D.14 and D.15 of this permit, respectively.

(2) Inspection and Maintenance Records - The Permittee shall maintain the following streamlined records:

(A) Identification and explanation of all BCM waste storage tanks unsafe or difficult to inspect, including a plan for when these tanks will be inspected;

(B) Reserved;

(C) Visual inspection log of BCM waste storage tanks, including the date of inspection and a statement that no leaks were detected, if applicable;

(D) One-time Method 21 inspection log of each BCM waste storage tank, including the date of inspection and a statement that no leaks were detected, if applicable;

(E) Information on each BCM waste storage tank inspection during which a leak is detected, including:

(i) Instrument identification numbers, operator name or initials, and identification of the equipment;

(ii) Date the leak was detected and the date of the first attempt to repair the leak;

(iii) Maximum instrument reading measured after leak is successfully repaired or determined to be nonrepairable;

(iv) Reason for any delay of repair if leak not repaired within 15 calendar days after discovery of the leak;

(v) Name, initials, or other form of identification of person whose decision it was that repair could not be effected without a shutdown;

(vi) Expected date of successful repair of leak if leak not required within 15 calendar days after discovery of leak;

(vii) Dates of shutdowns that occur while the equipment is unrepaired; and

(viii) Date of successful repair of the leak.

(F) Periods of planned routine maintenance; and

(G) Records of BCM waste storage tanks storing VOC/VOHAP with a vapor pressure less than 3.5 kPa.

(3) SSM Records - The SSM record keeping requirements are described in Sections D.14.10(a) and D.15.8(a).

(4) LDAR Records - The record keeping requirements for the LDAR standards are described in Section E of this permit.

(5) Storage Tank Records - Pursuant to New Source Performance Standard for Volatile Organic Liquid Storage Vessels (40 CFR 60.116b(a) and (b)), the Permittee shall, for the life of the source, keep readily accessible records of the dimensions and capacity for all applicable BCM waste storage tanks.

(6) Operating Plan – Pursuant to 40 CFR 60.115b(c)(1), the Permittee shall, for the life of the control equipment, maintain a copy of the operating plan required by 40 CFR 60.113b for all tanks with design capacity greater than or equal to 75 cubic meters.

(b) Periodic Reporting Requirements

(1) The streamlined quarterly reporting requirements are described in Sections D.14.10(b), D.15.8(b), E.1.3, and E.2.3, which shall satisfy the Pharmaceutical

MACT standards [40 CFR 63.1256(b)], Offsite Waste MACT [40 CFR 63.697(b)(3)], and the PSD BACT requirements [326 IAC 2-1.1-11].

(2) The streamlined quarterly report must also include:

(A) Inspections conducted during which a leak was detected; and

(B) Periods of planned routine maintenance.

(c) Immediate Reporting Requirements

(1) The immediate reporting requirements for the Offsite Waste MACT standards [40 CFR 63.697(b)(3)] and PSD BACT requirements [326 IAC 2-2-3] are described in Section D.14.10(c)(1) and D.15.8(c)(1).

(2) The immediate reporting requirements for the Pharmaceutical MACT [40 CFR 63.1250(g)] are described in Section D.14.10(c)(2) and D.15.8(c)(2).

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.10.8 Modifications and Construction: Advance Approval of Permit Conditions

(a) The Permittee may modify any existing emission units listed in this section of the permit without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the modified emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

(b) The Permittee may construct and install new emission units of the types described in this D section without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the new emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

Alternative Operating Scenario [326 IAC 2-7-20(d)]

D.10.9 Alternative Operating Scenario

(a) For tanks listed in D section, the Permittee shall comply with one of the following alternative operating scenarios:

(1) The Permittee shall follow the conditions of D.9 when the tank is storing solvent;

(2) The Permittee shall follow the conditions of this D section when the tank is storing waste.

(b) The Permittee shall keep log of the scenario under which the tank is operating according to 326 IAC 2-7-5(9)(A). A summary of these records shall be included in the annual compliance certification.

SECTION D.11 BCM and BCM SUPPORT OPERATIONS - WASTE CONTAINER OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14)]:

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	Control Device
SMALL BCM WASTE CONTAINERS:*				
A small BCM waste container, such as a drum, is defined as containing VOC/VOHAP and having a capacity greater than 0.1 cubic meters (26.4 gallons) and equal to or less than 0.42 cubic meters (110.5 gallons). Identification of these types of containers have not been individually listed given they are portable and continually change. Each onsite wastewater container and offsite waste container with this description type will follow the compliance requirements outlined in this section.				
LARGE BCM WASTE CONTAINERS:*				
A large BCM waste container, such as tanker or melon, is defined as containing VOC/VOHAP and having a capacity greater than 0.42 cubic meters (110.5 gallons). Identification of these types of containers have not been individually listed given they are portable and continually change. Each container with this description type will follow the compliance requirements outlined in this section.				

* Emission units marked with an asterisk are insignificant activities as defined by 326 IAC 2-7-1(21).

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.11.0 VOC PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 Prevention of Significant Deterioration (PSD), the VOC Best Available Control Technology (BACT) for the BCM Support Operations – Waste Container Operations shall either follow the operational standards identified in Conditions D.11.1(b) for small waste containers or D.11.2(b) for large waste containers.

D.11.1 Standards for Small BCM Waste Containers [40 CFR 63.1256(d), 40 CFR 63.2485, 40 CFR 63.135, 40 CFR 63.688, 326 IAC 2-2-3]

The following streamlined standards for small BCM waste containers satisfy the requirements of the Pharmaceutical MACT Standards for wastewater containers [40 CFR 63.1256(d)], MON Standards for wastewater tanks [40 CFR 63.2485], HON Standards for wastewater containers [40 CFR 63.135], Offsite Waste MACT Standards for waste containers [40 CFR 63.688], and PSD BACT requirements [326 IAC 2-2-3]:

(a) Definition Standards:

(1) A small BCM waste container is defined as any portable unit containing VOC/VOHAP material with a storage capacity of greater than 0.1 cubic meters (26.4 gallons) and less than or equal to 0.42 cubic meters (110.5 gallons).

(b) Operational Standards:

(1) The cover and all openings on each BCM waste container shall be maintained in

the closed position, except when adding material, removing material, accessing material for non-transfer-related routine activities, openings caused from a pressure relief device, or opening of a safety device.

(2) Each BCM waste container containing VOC/VOHAP shall meet one of the following:

(A) Existing Department of Transportation (DOT) specifications and testing requirements under 49 CFR 178; or

(B) The cover and all openings shall be maintained without leaks as specified in 40 CFR 63.1258(h) and 40 CFR 63.148.

(c) Inspection Standards:

(1) For each non-DOT small waste container that is not maintained under negative pressure, the Permittee shall:

(A) Conduct a one-time Method 21 inspection;

(B) Conduct semiannual visual inspections for visible, audible, or olfactory indications of leaks;

(C) Initiate repair of any leak on a BCM waste container no later than 5 calendar days after identification, and complete the repair within 15 days after identification unless the delay of repair applies in accordance with 40 CFR 63.1258(h)(5); and

(D) If applicable, include in a description of any equipment that is unsafe or difficult to inspect and a plan for when the equipment may be inspected.

(2) For each BCM small waste container, the Permittee shall:

(A) Conduct initial and semiannual visual inspections for improper work practices and control equipment failures.

(B) The Permittee shall attempt to repair any defect within 24 hours after detection of the defective container and complete the repair within 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the waste shall be removed from the container and the container shall not be used to manage waste until the defect is repaired.

D.11.2 Standards for Large BCM Waste Containers [40 CFR 63.1256(d), 40 CFR 63.2485, 40 CFR 63.135, 40 CFR 63.688, 326 IAC 2-2-3, 326 IAC 2-7-24]

The following standards represent the streamlined requirements of the Pharmaceutical MACT Standards under 40 CFR 63.1256(d), MON Standards under 40 CFR 63.2485, HON Standards for wastewater containers [40 CFR 63.136], Offsite Waste MACT Standards under 40 CFR 63.688, and Best Available Control Technology (BACT) requirements under 326 IAC 2-2-3:

(a) Definition Standards:

(1) A large BCM waste container is defined as any portable unit containing VOC/VOHAP material with a storage capacity of greater than 0.42 cubic meters (110.5 gallons).

(b) Operational Standards:

(1) The cover and all openings on each large BCM waste container shall be maintained in the closed position, and without leaks, except when adding material, removing material, accessing material for non-transfer-related routine activities, opening from a pressure relief device, and opening of a safety device.

(2) A submerged fill pipe shall be used when pumping BCM liquid waste into a large BCM waste container. The submerged fill pipe outlet shall extend to no more than 6 inches or within two fill pipe diameters of the bottom of the container while the container is being filled.

(c) Inspection Standards:

(1) On each new One-time Method 21 inspections shall be conducted on each new large BCM waste container not under negative pressure within 150 days upon first onsite usage, the Permittee shall:

(A) Conduct a one-time Method 21 inspection;

(B) Conduct semiannual visual inspections for visible, audible, or olfactory indications of leaks;

(C) Initiate repair of any leak on a BCM waste container no later than 5 calendar days after identification, and complete the repair within 15 days after identification unless the delay of repair applies in accordance with 40 CFR 63.1258(h)(5) and 40 CFR 63.148; and

(D) If applicable, include in a description of any equipment that is unsafe or difficult to inspect and a plan for when the equipment may be inspected.

(2) For each BCM large waste container, the Permittee shall:

(A) Conduct initial and semiannual visual inspections for improper work practices and control equipment failures.

(B) The Permittee shall attempt to repair any defect within 24 hours after detection of the defective container and complete the repair within 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the waste shall be removed from the container and the container shall not be used to manage waste until the defect is repaired.

(d) The LDAR standards that apply to the components associated with the emission units listed in this section are described in Section E.2.

Record Keeping and Reporting Requirements [326 IAC 2-7-10.5, 326 IAC 2-2, 40 CFR Part 63 Subpart DD, 40 CFR 63 Subpart GGG, 40 CFR Part 63 Subpart FFFF, 40 CFR Part 63 Subparts F and G]

D.11.3 Record Keeping and Reporting Requirements

(a) Record Keeping Requirements

(1) The Permittee shall maintain the following streamlined records for inspections required by Conditions D.11.1 and D.11.2:

(A) Identification and explanation of all BCM waste containers unsafe or difficult to inspect, including a plan for when these containers will be inspected;

(B) Reserved;

(C) Visual inspection log of BCM waste containers, including the date of inspection and a statement that no leaks were detected, if applicable;

(D) One-time Method 21 inspection log of each large BCM waste container, including the date of inspection and a statement that no leaks were detected, if applicable;

(E) Information on each BCM waste container inspection during which a leak is detected, including:

(i) Instrument identification numbers (for Method 21 inspections only), operator name or initials, and identification of the equipment;

(ii) Date the leak was detected and the date of the first attempt to repair the leak; and

(iii) Date of successful repair of the leak or date material removed from container.

(b) Quarterly Reporting Requirements

The Permittee shall include the inspection records specified in D.11.3 (a)(5) for each inspection conducted during which a leak was detected in the next quarterly report.

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.11.4 Modifications and Construction: Advance Approval of Permit Conditions

(a) The Permittee may modify any existing emission units listed in this section of the permit without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the modified emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

(b) The Permittee may construct and install new emission units of the types described in this D section without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the new emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

SECTION D.12 T49 LIQUID WASTE INCINERATOR, INCLUDING ASSOCIATED AIR POLLUTION CONTROL EQUIPMENT AND CONTINUOUS MONITORING SYSTEMS OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14):

Emission Unit Description	Building	Stack/Vent	Nominal Capacity	Control Device
T49 Liquid Waste Incinerator	T49	T49 Stack	75 MMBtu/hr	Condenser/Absorber; Hydro-SonicTM Scrubber

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.12.0 VOC, CO and Fluoride PSD BACT and MACT Requirements [326 IAC 2-2-3][40 CFR 63.1219]

(a) Pursuant to 326 IAC 2-2-3 Prevention of Significant Deterioration (PSD), the VOC Best Available Control Technology (BACT) for T49 shall be good combustion practices and no more than10 ppmv hydrocarbon dry corrected to 7% oxygen or no more than 100 ppmv dry corrected to 7% oxygen, rolled on an hourly basis CO limit, which is equivalent to the hydrocarbon (HC) MACT limit contained in 40 CFR 63.1219(a)(5) and 63.1219(b)(5).

(b) Pursuant to 326 IAC 2-2-3 PSD, the CO BACT for T49 shall be good combustion practices and no more than 100 ppmv dry corrected to 7% oxygen rolled on an hourly basis for CO emissions. This is equivalent to the CO MACT limit contained in 40 CFR 63.1219(a)(5) and 63.1219(b)(5).

(c) Pursuant to 326 IAC 2-2-3 PSD, the Fluorides (F-) BACT for T49 is caustic scrubbing with NaOH to achieve an outlet concentration of no more than 32 ppmv hydrogen chloride and chlorine gas (total chlorine) dry corrected to 7% oxygen, expressed as $Cl^{(-)}$ equivalent, which is equivalent to the MACT HCl and Cl_2 limit for existing sources contained in 40 CFR Part 63 Subpart EEE [63.1219(a)(6)].

D.12.1 General Applicability Requirements with Emission Standards [326 IAC 2-2-3 and 40 CFR Part 63 Subparts DD and EEE]

(a) Pursuant to the Hazardous Waste Combustor (HWC) MACT Standards [40 CFR 63.1206(b)(1)(i)] and the PSD BACT requirements [326 IAC 2-2-3], the emission standards and operating requirements shall apply as specified in Conditions D.12.2, D.12.3, D.12.4, D.12.5, D.12.6, and D.12.7 except during periods of startup, shutdown, and malfunction.

(b) Pursuant to the Off-Site Waste and Recovery Operations MACT Standards [40 CFR 63.684(b)(5)(i)], the T49 liquid waste incinerator shall have a permit issued under 40 CFR 270 whenever off-site waste material is treated and destroyed in the T49 liquid waste incinerator. The incinerator shall operate in accordance with the HWC MACT standards under 40 CFR Part 63 Subpart EEE.

(c) Pursuant to the HWC MACT standards [40 CFR 63.1206(b)(5)(ii) and (iii)] and the PSD requirements [326 IAC 2-2-3], the Permittee may make a change in the design, operation, or maintenance practices documented in the comprehensive performance test plan (CPT plan), Documentation of Compliance (DOC), Notification of Compliance (NOC), or startup, shutdown, and malfunction plan (SSM plan), as long as the Permittee complies with the following requirements:

(1) If it is determined that the change may adversely affect compliance with any emission standard, the Permittee shall comply with the requirements specified in 40 CFR 63.1206(b)(5)(i) prior to implementing the change(s).

(2) If it is determined that the change will not adversely affect compliance with the emission standards of this condition, the Permittee may implement the change(s) but must revise as necessary the performance test plan, DOC, NOC, and SSM plan, to reflect the change(s).

D.12.2 Particulate Matter Emission Standards [40 CFR 63.1219 and 326 IAC 4-2]

In order to satisfy the HWC MACT standards [40 CFR 63.1219(a)(7)], the particulate matter (PM) emissions from the T49 liquid waste incinerator stack exhaust shall not exceed 0.013 gr/dscf (30 mg/dscm) corrected to 7 percent oxygen.

D.12.3 Sulfur Dioxide (SO_2) Emission Standards [326 IAC 2-2-3 and 326 IAC 7-1.1-2]

In order to satisfy the PSD BACT requirements [326 IAC 2-2-3], the T49 liquid waste incinerator shall be equipped with a caustic scrubber system to control SO_2 emissions. The SO_2 emissions from the incinerator stack exhaust shall not exceed 500 ppmv dry corrected to 7% oxygen, averaged over a 24-hour daily period when burning waste streams. This facility is not subject to emission limitations and standards in 326 IAC 7 because the incinerator does not have the capability to burn fuel oil.

D.12.4 Oxides of Nitrogen (NOx) Emission Standards [326 IAC 2-2-3]

In order to satisfy the PSD BACT requirements [326 IAC 2-2-3], the T49 liquid waste incinerator shall implement good combustion practices to control NO_x emissions. The NOx emissions from the incinerator stack exhaust shall not exceed 975 ppmv dry corrected to 7% oxygen, expressed as NO_2, averaged over a 24-hour daily period when burning waste streams.

D.12.5 Hazardous Air Pollutant (HAP) and Fluoride Emission Standards [40 CFR 63.1219 and 326 IAC 2-2-3]

Except for periods of startup, shutdown and malfunction, the following emission standards shall apply at all times the T49 liquid waste incinerator is operating:

(a) Mercury – Pursuant to the HWC MACT standards [40 CFR 63.1219(a)(2)], the mercury emissions from the T49 liquid waste incinerator stack exhaust shall not exceed 130 ug/dscm, corrected to 7% oxygen on a 12-hour rolling average basis, from block hourly averages.

(b) Lead and Cadmium – In order to satisfy the HWC MACT standards [40 CFR 63.1219(a)(3)], the total semi-volatile metals (lead and cadmium) emissions from the T49 liquid waste incinerator stack exhaust shall not exceed 230 ug/dscm, corrected to 7% oxygen on a 12-hour rolling average basis, from block hourly averages.

(c) Arsenic, Beryllium, and Chromium – In order to satisfy the HWC MACT standards [40 CFR 63.1219(a)(4)], the total low volatile metals (arsenic, beryllium, and chromium) emissions from the T49 liquid waste incinerator stack exhaust shall not exceed 92 ug/dscm, corrected to 7 percent oxygen on a 12-hour rolling average basis, from block hourly averages.

(d) Hydrochloric Acid/Chlorine Gas (HCl/Cl_2) and Fluorides – The PSD BACT and HWC MACT standard for HCl, Cl_2 and fluorides is described in Condition D.12.0(c).

(e) Dioxin/Furans – In order to satisfy HWC MACT standards [40 CFR 63.1219(a)(1)(ii)], the dioxin/furan emissions from the T49 liquid waste incinerator stack exhaust shall not exceed 0.40 ng TEQ/dscm, corrected to 7 percent oxygen.

(f) Principle Organic Hazardous Constituents (POHCs) – In order to satisfy the HWC MACT standards [40 CFR 63.1219(c)(1) and (2)], the Permittee shall comply with the following requirements:

(1) The destruction and removal efficiency (DRE) for each principle organic hazardous constituent (POHC), excluding dioxin-listed hazardous wastes F020, F021, F022, F023, F026, or F027 shall be at least 99.99 percent.

(2) Dioxin-listed hazardous wastes F020, F021, F022, F023, F026, or F027 shall not be burned in the T49 liquid waste incinerator.

(g) Operating Parameter Limits (OPLs) – In order to comply with the NESHAP from Hazardous Waste Combustors (HWC) emission limits in this condition, the operating parameters of the T49 Incinerator, as established during performance tests and documented in the Notification of Compliance (NOC) postmarked December 23, 2009, and associated emission control equipment shall not exceed limits described below as maximum limits or fail to achieve limits described as minimum limits.

For future performance tests, once the Permittee postmarks the NOC for the performance test according to D.12.13(a)(9), the OPLs from the NOC become effective and supersede the OPLs in the Documentation of Compliance (DOC), as well as the OPLs from the previous performance test listed in this section.

Operating Parameter	Limit	Units	Averaging Period	Demonstrates Compliance for:
Minimum Atomizing Air Media Pressure	60	psig	1-HR RA	D.12.5(f)
Maximum Primary Waste Feed Viscosity	460	centipoise	NA	D.12.5(f)
Maximum Secondary Waste Feed Viscosity	460	centipoise	NA	D.12.5(f)
Maximum Primary Waste Feed Rate	7,117	lbs/hr	1-HR RA	D.12.5(e) D.12.5(f)
Maximum Secondary Waste Feed Rate	18,326	lbs/hr	1-HR RA	D.12.5(e) D.12.5(f)
Minimum Combustion Temperature	1,850	^{o}F	1-HR RA	D.12.5(e) D.12.5(f)
Maximum Combustion Air Flow Rate	14,512	acfm	1-HR RA	D.12.2 D.12.5(a) D.12.5(b) D.12.5(c) D.12.5(d) D.12.5(e) D.12.5(f)
Maximum Mercury Feed Rate	0.0040	lbs/hr	12-hr RA	D.12.5(a)
Maximum Semi-Volatile Metals (SVM) Feed Rate	0.20	lbs/hr	12-hr RA	D.12.5(b)
Maximum Low-Volatile Metals (LVM) Feed	0.30	lbs/hr	12-hr RA	D.12.5(c)

Operating Parameter	Limit	Units	Averaging Period	Demonstrates Compliance for:
Rate				
Maximum Ash Feed Rate	1,850	lbs/hr	12-hr RA	D.12.2
Maximum Total Chlorine Feed Rate	3,503	lbs/hr	12-hr RA	D.12.5(d)
Minimum Condenser/Absorber Flow Rate	600	gpm	1-HR RA	D.12.5(a) D.12.5(b) D.12.5(c) D.12.5(d)
Minimum Differential Pressure across Condenser/Absorber	0.5	in.w.c	1-HR RA	D.12.5(a) D.12.5(b) D.12.5(c) D.12.5(d)
Minimum Hydro-Sonic Scrubber Flow Rate	291	gpm	1-HR RA	D.12.2 D.12.5(a) D.12.5(b) D.12.5(c) D.12.5(d)
Minimum Hydro-Sonic Equivalent Differential Pressure	75	in.w.c	1-HR RA	D.12.2 D.12.5(a) D.12.5(b) D.12.5(c) D.12.5(d)
Minimum Condenser/Absorber pH	5.0	S.U.	1-HR RA	D.12.5(d)
Maximum Condenser/Absorber % Solids	3.5	%TDS	12-hr RA	D.12.2 D.12.5(a) D.12.5(b) D.12.5(c)

D.12.6 Reserved

D.12.7 Reserved

D.12.8 Automatic Waste Feed Cutoff System Requirements [40 CFR 63.1206]

In order to satisfy the HWC MACT standards [40 CFR 63.1206], the Permittee shall operate the T49 liquid waste incinerator with a functioning Automatic Waste Feed Cutoff (AWFCO) system that meets the requirements of 40 CFR 63.1206(c)(3).

(a) Except as allowed under (c) of this condition, the AWFCO system shall be operated such that it immediately and automatically cuts off the hazardous waste feed when any of the following occur at any time:

(1) An operating parameter is exceeded;

(2) An emission standard monitored by the CO CEMS is exceeded;

(3) A span value of any CMS, except a CEMS, is met or exceeded;

(4) Upon malfunction of a CMS (excluding the NOx and SO_2 CEMS) monitoring an operating parameter limit or emission level; or

(5) When any component of the automatic waste feed cutoff system fails.

(b) During all AWFCO events, the Permittee shall continue to:

(1) Duct combustion gases to the air pollution control system while hazardous waste remains in the combustion chamber; and

(2) Monitor the applicable combustor operating parameters and emission levels.

(c) The Permittee may ramp down the hazardous waste feed rate of pumpable hazardous waste over a period not to exceed one (1) minute during an AWFCO event in accordance with the procedures in the O&M plan, providing the automatic waste feed cutoff is not triggered by an exceedance of any of the following operating limits:

(1) Minimum combustion chamber temperature,

(2) Maximum hazardous waste feed rate, or

(3) Any hazardous waste combustor firing system operating limits.

The procedures for AWFCO events specified in the O& M plan must include a statement that the ramp down must begin immediately upon initiation of automatic waste feed cutoff and must prescribe a bona fide ramping down.

(d) After an AWFCO event, the Permittee shall not restart the hazardous waste feed until the operating parameters and emission levels are within their respective limits.

(e) If after any AWFCO event, there is an exceedance of an emission standard or operating requirement, irrespective of whether the exceedance occurred while hazardous waste remained in the combustion chamber, the Permittee shall:

(1) Investigate the cause of the AWFCO,

(2) Take appropriate corrective measures to minimize future AWFCOs, and

(3) Record the findings and corrective measures in the operating record.

D.12.9 Leak Detection and Repair (LDAR) Program [326 IAC 2-2-3, 40 CFR Part 63 Subpart DD, 40 CFR Part 61 Subpart V]

The LDAR standards that apply to components associated with the waste transfer/feed systems connected to the T49 liquid waste incinerator are described in Section E.2 of this permit.

D.12.10 Inspection Requirements [40 CFR 63.1206(c)]

(a) In order to satisfy the HWC MACT standards [40 CFR 63.1206(c)(5)], the Permittee shall conduct daily visual inspections of the T49 liquid waste incinerator to ensure the combustion zone is sealed.

(b) In order to satisfy the HWC MACT standards [40 CFR 63.1206(c)(3)(vii)], the Permittee shall test the AWFCO system and associated alarms at least once per week to verify operability, unless the operating record documents that the weekly inspections unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, the Permittee shall conduct operability testing monthly.

D.12.11 Training and Certification Requirements [40 CFR 63.1206(c)(6)]

(a) Pursuant to the HWC MACT standards [40 CFR 63.1206(c)(6)], the Permittee shall establish a Training and Certification Program for all categories of personnel whose activities may reasonably be expected to directly affect emissions of HAPs from all operations associated with the T49 liquid waste incinerator.

Said programs shall be of a technical level commensurate with the person's duties as specified in the training manual. All operating training and certification programs shall be recorded in the operating record.

(b) A certified control room operator shall be on duty at the site at all times the T49 liquid waste incinerator is in operation and the T49 liquid waste incinerator, including associated air pollution control equipment and continuous monitoring systems, shall be operated and maintained at all times by persons who are trained and certified according to the Training and Certification Program.

D.12.12 Plans and Procedures [326 IAC 2-2-3, 40 CFR 63.1206, 40 CFR 63.1211, 326 IAC 2-7-5(13)]

In order to satisfy the HWC MACT Standards [40 CFR 63.1206] and the PSD BACT requirements [326 IAC 2-2-3], the Permittee shall develop and implement the following written plans, which shall be maintained in the operating record:

(a) Operations and Maintenance (O&M) Plan – The O&M Plan shall define operations during periods of normal operation pursuant to 40 CFR 63.1206(c)(1) and (7). The O&M Plan required under the HWC MACT standards shall satisfy the requirements of the 326 IAC 1-6-3 Preventive Maintenance Plan.

(b) Startup, Shutdown, and Malfunction (SSM) Plan shall be developed and implemented in accordance with 40 CFR 63.1206(c)(2), to ensure that the T49 liquid waste incinerator, including associated air emission control equipment and CEMS and CMS, is operated and maintained during periods of startup, shutdown, and malfunction and that all malfunctions are corrected as soon as practicable after their occurrence in order to minimize excess emissions. The SSM Plan shall contain the following information:

(1) Detailed procedures for operating and maintaining the T49 liquid waste incinerator system, including associated CEMS and CMS equipment, during periods of startup, shutdown, and malfunction; and

(2) Corrective action program for malfunctioning process, air pollution control, CEMS, and CMS equipment.

(c) Feedstream Analysis Plan -The Feedstream Analysis Plan shall be developed and implemented in accordance with 40 CFR 63.1209(c)(2) for those parameters with feed rate limits defined in Condition D.12.15.

(d) Continuous Emissions Monitoring System (CEMS) Standard Operating Procedures (SOP) – The Permittee shall prepare and implement a SOP that provides step-by-step procedures and operations of the CEMS in accordance with 326 IAC 3-5-4(c)(9) – Preventive maintenance procedures and corrective maintenance procedures that include those procedures taken to ensure continuous operation and to minimize malfunctions.

Testing and Monitoring Requirements [326 IAC 2-7-6(1) (6)] [326 IAC 2-7-5(1)]

D.12.13 Performance Test Requirements [40 CFR 63.1207, 326 IAC 2-1.1-11, 326 IAC 3-6]

The following streamlined performance test requirements shall satisfy the NESHAP General Provisions [40 CFR 63.7], the HWC MACT requirements [40 CFR 63.1207 and 63.1209], the PSD BACT requirements for VOC and fluorides [326 IAC 2-1.1-11] and the State emission testing requirements [326 IAC 3-6]:

(a) Comprehensive Performance Test

(1) The Permittee shall submit a notification of intention to conduct a comprehensive performance test and CMS performance evaluation and a site-specific test plan and CMS performance evaluation test plan at least one year before the performance test and performance evaluation are scheduled to begin.

(2) The Permittee shall perform initial comprehensive performance tests within 12 months after the HWC MACT compliance date unless an exemption is granted pursuant to 40 CFR 63.1207(e)(3).

(3) The Permittee shall submit a notification of intention to conduct the comprehensive performance test at least 60 calendar days before the test is scheduled to begin.

(4) The comprehensive performance tests shall be conducted under operating conditions representative of the extreme range of normal conditions as specified in 40 CFR 63.1207(g) and 63.7(e)(1) for the worst case mode associated with each applicable pollutant limit or emission standard.

(5) The operating parameters defined in Condition D.12.15 shall be monitored during the performance test to establish the parametric limits.

(6) All required comprehensive performance testing shall be completed within 60 days after the date of commencement of the tests pursuant to 40 CFR 63.1207(d)(3).

(7) The Permittee may use previous emissions test data in lieu of the initial comprehensive performance tests as allowed under 40 CFR 63.1207(c)(2).

(8) Pursuant to 40 CFR 63.7(h)(2), individual performance tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the relevant standard(s) on a continuous basis, or the source is being operated under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering the request.

(9) Pursuant to 40 CFR 63.1207(j), the Permittee shall:

(A) Postmark a Notification of Compliance (NOC) documenting compliance or noncompliance with the emission standards and continuous monitoring system requirements and identify operating parameter limits under 40 CFR 63.1209 within 90 days of completion of the comprehensive performance test; and

(B) Comply with all operating requirements specified in the NOC in lieu of the limits specified in the Documentation of Compliance required under 40 CFR 63.1211(c) upon postmark of the NOC.

These submittal requirements satisfy the reporting requirements of 326 IAC 3-6 as allowed under extension provisions of 326 IAC 3-6-4(b).

(b) Confirmatory Performance Tests

(1) The Permittee shall submit a notification of intention to conduct a confirmatory performance test and CMS performance evaluation and a site-specific test plan and CMS performance evaluation test plan at least 60 days before the performance test and performance evaluation are scheduled to begin.

(2) The confirmatory performance tests shall be conducted under operating conditions representative of the range of normal conditions as specified in 40 CFR 63.1207(g)(2) and 63.7(e)(1) for the parameters specified in 40 CFR 63.1207(g)(2) associated with the dioxin/furan emission standard unless the Administrator approves an alternative range under 40 CFR 63.1207(g)(v).

(3) The operating parameters defined in Condition D.12.15 shall be monitored during the performance test.

(4) All required comprehensive performance testing shall be completed within 60 days after the date of commencement of the tests pursuant to 40 CFR 63.1207(d)(3).

(5) Pursuant to 40 CFR 63.7(h)(2), individual performance tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the relevant standard(s) on a continuous basis, or the source is being operated under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering the request.

(6) Pursuant to 40 CFR 63.1207(j), the Permittee shall postmark a Notification of Compliance (NOC) documenting compliance or noncompliance with the applicable dioxin/furan emission standard within 90 days of completion of the confirmatory performance test. This submittal requirement satisfies the reporting requirements of 326 IAC 3-6 as allowed under extension provisions of 326 IAC 3-6-4(b).

(c) Subsequent Performance Tests

The Permittee shall conduct subsequent Comprehensive Performance Tests and Confirmatory Performance Tests at the frequencies specified in 40 CFR 63.1207(d).

(d) Pursuant to 326 IAC 3-6-4(b), 40 CFR 63.1207(i)(1) and 40 CFR 63.1207(i)(2), the Permittee shall submit the performance test reports within 90 days following the test.

D.12.14 Continuous Emissions Monitoring Systems (CEMS) Operating Requirements [40 CFR 63.1209, 40 CFR 63.8, 326 IAC 2-7-24, 326 IAC 3-5, 326 IAC 2-1.1-11, 40 CFR Part 60 Appendix B, 40 CFR Part 60 Appendix F]

(a) CO and O_2 CEMS Operation Requirements – The following provisions shall be applied at all times the T49 incinerator is in operation and represent the streamlined requirements of the HWC MACT standards for CO and HC [40 CFR 63.1209(a), (d), (e), (f), and (h)], PSD BACT requirements for CO and VOC [326 IAC 2-1.1-11], and the emission monitoring requirements for MACT and PSD sources [326 IAC 3-5-1(b) and (d)]:

(1) The Permittee shall install and operate the CO and O_2 CEMS in accordance with the QA requirements of the HWC MACT standards [40 CFR Part 63 Appendix to Subpart EEE], the applicable QC and performance evaluation requirements of 40 CFR 63.1209(d), and the applicable performance specification requirements of 40 CFR 60, Appendix B.

(2) The CEMS shall be installed and operational upon certification of the DOC for the HWC MACT.

(3) Continuous monitor means a device which continuously samples the regulated parameter without interruption, evaluates the detector response at least once every 15 seconds and computes and records the average at least every 60 seconds, except during allowable periods of calibration and other exceptions identified in applicable requirements, plans and/or procedures. One-minute average means the average of detector responses calculated at least every 60 seconds from response obtained at least every 15 seconds.

(b) SO_2 and NOx CEMS Operation Requirements – The following requirements shall apply when the T49 Incinerator is burning waste

(1) The Permittee shall install and operate the SO_2 and NOx CEMS in accordance with the QA/QC criteria set forth in 40 CFR 60, Appendix B and 40 CFR 60, Appendix F, Procedure 1.

(2) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period.

(3) The Startup, Shutdown, and Malfunction (SSM) Plan required by Condition D.12.12 (b) shall include procedures for monitoring and recording the following information during times of SO_2 or NOx CEMS malfunction:

(A) When the SO_2 CEMS malfunctions, the Permittee shall monitor and record the Hydro-Sonic™ equivalent pressure drop and scrubber liquid flow rate as required by Condition D.12.15 (a) and the scrubber liquid pH as required by Condition D.12.15 (a).

(B) When the NOx CEMS malfunctions, the Permittee shall monitor and record the combustion chamber temperature, combustion air flow rate, and primary and secondary waste feed rates as required by Condition D.12.15 (a), and assess NOx emissions, using waste testing, waste shipment and process knowledge, to determine whether the quantity of nitrogen fed into the incinerator during that time could have exceeded the worst case 24-hour daily average nitrogen feed rate of 1,650 pounds per hour that formed the basis of the NOx BACT limit.

D.12.15 Parametric Continuous Monitoring Systems (CMS) Requirements [40 CFR 63.8(c), 40 CFR 63.1209, and 326 IAC 2-1.1-11]

(a) The Permittee shall operate the CMS to monitor the Operating Parameter Limits (OPLs) listed in D.12.5(g) in accordance with the quality assurance requirements specified in 40 CFR 63.1209(d) at all times the T49 incinerator is in operation. To satisfy the HWC MACT standards [40 CFR 63.1209(b), (d), (e), (f), and (h)] and the requirements for PSD sources [326 IAC 2-1.1-11] the parameters listed in D.12.5(g) shall be monitored at all times the T49 incinerator is in operation.

(b) Continuous operation is defined as the collection of at least one measurement for each successive 15-second period, regardless of startup, shutdown and malfunction.

(c) Pursuant to the HWC MACT standards [40 CFR 63.1209(a)(5)] and the compliance monitoring methods for PSD sources [326 IAC 2-1.1-11], the Permittee may petition the Administrator to use CEMS for compliance monitoring in lieu of compliance with the operating parameter limits established in (a) of this condition.

(d) If applicable, the Permittee may document compliance using the waiver provisions of 40 CFR 63.1207(m) in lieu of complying with the requirements of (a) and (c) of this condition.

D.12.16 Minimum Data Requirements – SO_2 and NOx Compliance [326 IAC 2-1.1-11]

The following defines when CEMS data must be supplemented with data required by condition D.12.14 (b)(3), D.12.17 (a)(12), and D.12.18 (a)(2):

(a) When the period of incinerator operation (i.e., receiving waste streams) is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 % of the operating hours, or

(b) When the period of incinerator operation (i.e., receiving waste streams) is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.

(c) Monitoring data are insufficient to constitute a valid hour of data if measured values are unavailable for any of the required 15-minute periods within the hour.

Record Keeping and Reporting Requirement [326 IAC 2-7-5]

D.12.17 Record Keeping Requirements

(a) The Permittee shall maintain the following records:

(1) Notifications, reports, and other documents, such as the Documentation of Compliance, as required by 40 CFR 63.1200, 63.1211(c), and 63.10(b) and (c).

(2) All data recorded by continuous monitoring systems (CMS), including continuous emission monitoring systems (CEMS), required by Conditions D.12.14 and D.12.15;

(3) Documentation that a change will not adversely affect compliance with the emission standards or operating requirements as required by 40 CFR 63.1206(b)(5)(ii);

(4) Records of the estimated hazardous waste residence time as required by 40 CFR 63.1206(b)(11);

(5) Plans and procedures as required by Condition D.12.12;

(6) Documentation of the results of the investigation, corrective measures taken, and evaluation of excessive exceedances during malfunctions as required by 40 CFR 63.1206(c)(2)(v)(A);

(7) Corrective Measures for any AWFCO that results in an exceedance of an applicable emission standard or operating parameter limit as required by 40 CFR 63.1206(c)(3)(v);

(8) Documentation of the results of the AWFCO operability testing as required by Condition D.12.10 (b) and 40 CFR 63.1206(c)(3)(vii);

(9) Daily visual inspection records of the T49 liquid waste incinerator to ensure the combustion zone is sealed as required by Condition D.12.10 (a) and 40 CFR 63.1206(c)(5);

(10) A copy of the Operator Certification and Training Program required by Condition

D.12.11 and 4 0 CFR 63.1206(c)(6);

(11) Documentation of the changes in modes of operation as required by 40 CFR 63.1209(q); and

(12) For days when Condition D.12.16 requires that CEMS data must be supplemented, the documentation of the information required by Condition D.12.14 (b)(3).

D.12.18 Reporting Requirements

(a) Quarterly Reporting Requirements

(1) The following streamlined quarterly reporting requirements shall satisfy the HWC MACT standards [40 CFR 63.1211], which references the MACT General Provisions [63.7-63.10], PSD BACT requirements [326 IAC 2-1.1-11], and the continuous emissions monitoring requirements [326 IAC 3-5]:

(A) Reports shall be submitted in accordance with Condition C.18;

(B) Summary reports of excess emissions, parameter exceedances, and monitor downtime including information specified in 63.10(c)(5)-(c)(13);

(C) SSM summary reports for the T49 waste incinerator control system, including associated CEMS and CMS equipment;

(D) Excessive exceedances report, if applicable, as required by 40 CFR 63.1206(c)(3)(vi); and

(2) In addition to the requirements described in (a)(1) of this condition, the Permittee shall report the following information for the NOx and SO_2 CEMS to satisfy the PSD BACT requirements [326 IAC 2-1.1-11]:

(A) A list of days when condition D.12.16 requires that CEMS data must be supplemented that provides:

(B) A detailed report for each day when condition D.12.16 requires that CEMS data must be supplemented:

(i) the information required by Condition D.12.14 (b)(3), and

(ii) an analysis of whether that information indicates continuous compliance with the limit established in Condition D.12.3 or D.12.4, and if the NOx CEMS malfunctions for greater than six continuous hours, an assessment of NOx emissions using waste testing, waste shipment, and process knowledge whether the quantity of nitrogen fed into the incinerator during that time could have exceeded the worst case 24-hour daily average nitrogen feed rate of 1,650 pounds per hour that formed the basis of the NOx BACT limit.

(b) Immediate Reporting Requirements

(1) The Permittee shall submit any revision to the SSM Plan that may significantly increase emissions of hazardous air pollutants to the Administrator for approval within 5 days after making a change to the plan to satisfy the reporting requirements under the HWC MACT standards [40 CFR 63.1206(c)(2)(ii)(C)].

(2) The reporting requirements in the HWC MACT standards [40 CFR 63.1211] for Startup, Shutdown and Malfunction (SSM) shall be used to satisfy the reporting requirements under the HWC MACT standards and PSD BACT requirements [326 IAC 2-2-3].

(A) The Permittee shall report all actions taken during a T49 incinerator system SSM event that results in an exceedance of a relevant emission standard when those actions are inconsistent with the procedures specified in the SSM Plan. The immediate report shall be submitted to the agency via a telephone call or facsimile within 2 working days after commencing actions inconsistent with the plan.

(B) Within 7 working days after the end of an SSM event that results in an exceedance of a relevant emission standard when those actions taken by the Permittee are inconsistent with the procedures specified in the SSM Plan, the Permittee shall submit a letter containing the following information:

(i) Name, title and signature of responsible official certifying accuracy;

(ii) Explanation of the circumstances of the event;

(iii) Reason for not following the SSM Plan;

(iv) Report any excess emissions and/or parameter monitoring exceedances are believed to have occurred; and

(v) Action taken to minimize emissions.

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.12.19 Modifications and Construction: Advance Approval of Permit Conditions

(a) The Permittee may modify any existing emission units listed in this section of the permit without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the modified emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

(b) The Permittee may construct and install new emission units of the types described in this D section without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the new emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

SECTION D.13 T149 SOLID-LIQUID WASTE INCINERATOR, INCLUDING ASSOCIATED AIR POLLUTION CONTROL EQUIPMENT AND CONTINUOUS MONITORING SYSTEMS OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14)]:

Emission Unit Description	Building	Stack/Vent	Nominal Capacity	Control Device
T149 solid-liquid waste incinerator with Secondary Combustion Chamber (Natural Gas for Startup, Fuel Oil for Deslagging Operations)	T149	T149 Stack	50 MMBtu/hr	SNCR; Condenser/Absorber; Hydro-SonicTM Scrubber

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.13.0 VOC, CO and Fluoride PSD BACT and MACT Requirements [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3 Prevention of Significant Deterioration (PSD), the VOC Best Available Control Technology (BACT) for T149 shall be good combustion practices and no more than 10 ppmv hydrocarbon dry corrected to 7% oxygen or no more than 100 ppmv dry corrected to 7% oxygen, rolled on an hourly basis CO limit, which is equivalent to the hydrocarbon (HC) MACT limit contained in 40 CFR 63.1219(a)(5) and 63.1219(b)(5).

(b) Pursuant to 326 IAC 2-2-3 PSD, the CO BACT for T149 shall be good combustion practices and no more than 100 ppmv dry corrected to 7% oxygen rolled on an hourly basis for CO emissions. This is equivalent to the CO MACT limit contained in 40 CFR 63.1219(a)(5) and 63.1219(b)(5).

(c) Pursuant to 326 IAC 2-2-3 PSD, the Fluorides (F-) BACT for T149 is caustic scrubbing with NaOH to achieve an outlet concentration of no more than 32 ppmv hydrogen chloride and chlorine gas (total chlorine) dry corrected to 7% oxygen, expressed as Cl(-) equivalent, which is equivalent to the MACT HCl and Cl2 limit for existing sources contained in 40 CFR Part 63 Subpart EEE [63.1219(a)(6)].

D.13.1 General Applicability Requirements with Emission Standards [326 IAC 2-2-3 and 40 CFR Part 63 Subparts DD and EEE]

(a) Pursuant to the Hazardous Waste Combustor (HWC) MACT Standards [40 CFR 63.1206(b)(1)(i)] and the PSD BACT requirements [326 IAC 2-2-3], the emission standards and operating requirements shall apply as specified in Conditions D.13.2, D.13.3, D.13.4, D.13.5, D.13.6, and D.13.7 except during periods of startup, shutdown, and malfunction.

(b) Pursuant to the Off-Site Waste and Recovery Operations MACT Standards [40 CFR 63.684(b)(5)(i)], the T149 solid-liquid waste incinerator shall have a permit issued under 40 CFR 270 whenever off-site waste material is treated and destroyed in the T149 solid-liquid waste incinerator. The incinerator shall operate in accordance with the HWC MACT standards under 40 CFR Part 63 Subpart EEE.

(c) Pursuant to the HWC MACT standards [40 CFR 63.1206(b)(5)(ii) and (iii)] and the PSD BACT requirements [326 IAC 2-2-3], the Permittee may make a change in the design, operation, or maintenance practices documented in the comprehensive performance test plan (CPT plan), Documentation of Compliance (DOC), Notification of Compliance (NOC), or startup, shutdown, and malfunction plan (SSM plan), as long as the Permittee complies with the following requirements:

(1) If it is determined that the change may adversely affect compliance with any emission standard, the Permittee shall comply with the requirements specified in 40 CFR 63.1206(b)(5)(i) prior to implementing the change(s).

(2) If it is determined that the change will not adversely affect compliance with the emission standards of this condition, the Permittee may implement the change(s) but must revise as necessary the performance test plan, Documentation of Compliance, Notification of Compliance, and startup, shutdown, and malfunction plan, to reflect the change(s).

D.13.2 Particulate Matter Emission Standards [40 CFR 63.1219]

In order to satisfy the HWC MACT standards [40 CFR 63.1219(a)(7)], the particulate matter (PM) emissions from the T149 solid-liquid waste incinerator stack exhaust shall not exceed 0.013 gr/dscf (30 mg/dscm), corrected to 7 percent oxygen.

D.13.3 Sulfur Dioxide (SO_2) Emission Standards [326 IAC 2-2-3 and 326 IAC 7-1.1-2]

(a) In order to satisfy the PSD BACT requirements [326 IAC 2-2-3], the T149 solid-liquid waste incinerator shall be equipped with a caustic scrubber system to control SO_2 emissions. The SO_2 emissions from the incinerator stack exhaust shall not exceed 400 ppmv dry corrected to 7% oxygen, averaged over a 24-hour daily period when burning waste streams.

(b) In order to satisfy the State SO_2 rules [326 IAC 7-1.1-2], the SO_2 emissions from the combustion of fuel oil during the deslagging process in the T149 solid-liquid waste incinerator shall not exceed 0.5 pounds per million British thermal units (lbs/MMBtu).

D.13.4 Oxides of Nitrogen (NOx) Emission Standards [326 IAC 2-2-3]

In order to satisfy the PSD BACT requirements [326 IAC 2-2-3], the T149 solid-liquid waste incinerator shall be equipped with selective non-catalytic reduction (SNCR) equipment to control NO_x emissions. The NOx emissions from the incinerator stack exhaust shall not exceed 170 ppmv dry corrected to 7% oxygen, expressed as NO_2, averaged over a 24-hour daily period when burning waste streams.

D.13.5 Hazardous Air Pollutant (HAP) Emission Standards [40 CFR 63.1219, US EPA approved Alternative Monitoring Petition initially approved January 27, 2006]

Except for periods of startup, shutdown and malfunctions, the following emission standards shall apply at all times the T149 solid-liquid waste incinerator is operating:

(a) Mercury – Pursuant to the HWC MACT standards [40 CFR 63.1219(a)(2)], the mercury emissions from the T149 solid-liquid waste incinerator stack exhaust shall not exceed 130 ug/dscm, corrected to 7% oxygen on a 12-hour rolling average basis, from block hourly averages.

(b) Lead and Cadmium – Pursuant to the HWC MACT standards [40 CFR 63.1219(a)(3)], the total semi-volatile metals (lead and cadmium) emissions from the T149 solid-liquid waste incinerator stack exhaust shall not exceed 230 ug/dscm, corrected to 7 percent oxygen on a 12-hour rolling average basis, from block hourly averages.

(c) Arsenic, Beryllium, and Chromium – Pursuant to the HWC MACT standards [40 CFR 63.1219(a)(4)], the total low volatile metals (arsenic, beryllium, and chromium) emissions from the T149 solid-liquid waste incinerator stack exhaust shall not exceed 92 ug/dscm, corrected to 7 percent oxygen on a 12-hour rolling average basis, from block hourly averages.

(d) Hydrochloric Acid/Chlorine Gas (HCl/Cl_2) and Fluorides - The PSD BACT and HWC MACT standard for HCl, Cl_2 and fluorides is described in Condition D.13.0(c).

(e) Dioxin/Furans – Pursuant to HWC MACT standards [40 CFR 63.1219(a)(1)], the dioxin/furan emissions from the T149 solid-liquid waste incinerator stack exhaust shall not exceed 0.40 ng TEQ/dscm, corrected to 7 percent oxygen.

(f) Principle Organic Hazardous Constituents (POHCs) – Pursuant to the HWC MACT standards [40 CFR 63.1219(c)(1) and (2)], the Permittee shall comply with the following requirements:

(1) The destruction and removal efficiency (DRE) for each principle organic hazardous constituent (POHC), excluding dioxin-listed hazardous wastes F020, F021, F022, F023, F026, or F027 shall be at least 99.99 percent.

(2) Dioxin-listed hazardous wastes F020, F021, F022, F023, F026, or F027 shall not be burned in the T149 solid-liquid waste incinerator.

(g) Operating Parameter Limits (OPLs) – In order to comply with the NESHAP from Hazardous Waste Combustors (HWC) emission limits in this condition, the operating parameters of the T149 solid-liquid waste Incinerator, as established during the performance tests, and documented in the Notification of Compliance (NOC) postmarked December 15, 2010 and associated emission control equipment shall not exceed limits described below as maximum limits or fail to achieve limits described as minimum limits.

For future performance tests, once the Permittee postmarks the NOC for the performance test according to D.13.13(a)(9), the OPLs from the NOC become effective and supersede the OPLs in the Documentation of Compliance (DOC), as well as the OPLs from the previous performance test listed in this section.

The limits below are applicable when monitoring is required by D.13.15(a).

Operating Parameter Limit	**Averaging Period**	**Operating Limit**	**Units**
Maximum Primary Waste Feed to Primary Combustion Chamber	1-hr RA[1]	1,501	lbs/hr
Maximum Secondary Waste Feed to Primary Combustion Chamber	1-hr RA[1]	4,655	lbs/hr
Maximum Solid Feed Rate	1-hr RA[1]	5,529	lbs/hr
Minimum Primary Combustion Chamber Temperature	1-hr RA[1]	1,598	^oF
Maximum Primary Waste Feed to Secondary Combustion Chamber	1-hr RA[1]	1,801	lbs/hr
Maximum Secondary Waste Feed to Secondary Combustion Chamber	1-hr RA[1]	1,440	lbs/hr
Minimum Secondary Combustion Chamber Temperature	1-hr RA[1]	1,809	^oF
Maximum Stack Gas Flow Rate	1-hr RA[1]	18,812	dscfm
Maximum Waste Feed Viscosity	Monthly Analysis	460	Centi-poise
Minimum Waste Atomizing Pressure	1-hr RA[1]	75	psig
Maximum Mercury Feed Rate in all Feed Streams	12-hr RA	0.014	lbs/hr

Maximum SVM Feed Rate in all Feed Streams	12-hr RA	7.7	lbs/hr
Maximum LVM Feed Rate in all Feed Streams	12-hr RA	360	lbs/hr
Maximum LVM Feed Rate in all Pumpable Feed Streams	12-hr RA	8.3	lbs/hr
Maximum ash feed rate in all feed streams	12-hr RA	4,576	lbs/hr
Maximum Total Chlorine feed rate in all feed streams	12-hr RA	1,972	lbs/hr
Minimum Condenser/Absorber pressure drop	1-hr RA	1	in w.c.
Minimum Condenser/Absorber liquid feed pressure	1-hr RA	5	psig
Minimum Condenser/Absorber scrubber water pH	1-hr RA	2.3	pH
Minimum Condenser/Absorber scrubber liquid flow rate	1-hr RA	980	gpm
Minimum Hydro-Sonic Scrubber Equivalent Pressure Drop	1-hr RA	54	in w.c.
Maximum Hydro-Sonic Scrubber conductivity	12-hr RA	1.6	% solids
Minimum Hydro-Sonic Scrubber Liquid Feed Rate	1-hr RA	285	gpm
Minimum Hydro-Sonic Scrubber water pH	1-hr RA	3.3	pH

1. CMS shall be operated as described in D.13.15.

D.13.6 Reserved

D.13.7 Reserved

D.13.8 Automatic Waste Feed Cutoff System Requirements [40 CFR 63.1206]

In order to satisfy the HWC MACT standards, the Permittee shall operate the T149 solid-liquid waste incinerator with a functioning Automatic Waste Feed Cutoff (AWFCO) system that meets the requirements of 40 CFR 63.1206(c)(3).

(a) Except as allowed under (c) of this condition, the AWFCO system shall be operated such that it immediately and automatically cuts off the hazardous waste feed when any of the following occur at any time:

(1) An operating parameter is exceeded;

(2) An emission standard monitored by the CO CEMS is exceeded;

(3) A span value of any CMS, except a CEMS, is met or exceeded;

(4) Upon malfunction of a CMS (excluding the NOx and SO_2 CEMS) monitoring an operating parameter limit or emission level; or

(5) When any component of the automatic waste feed cutoff system fails.

(b) During all AWFCO events, the Permittee shall continue to:

(1) Duct combustion gases to the air pollution control system while hazardous waste remains in the combustion chamber; and

(2) Monitor the applicable combustor operating parameters and emission levels.

(c) The Permittee may ramp down the hazardous waste feedrate of pumpable hazardous waste over a period not to exceed one (1) minute during an AWFCO event in accordance with the procedures in the O&M plan, providing the automatic waste feed cutoff is not triggered by an exceedance of any of the following operating limits:

(1) Minimum combustion chamber temperature,

(2) Maximum hazardous waste feed rate, or

(3) Any hazardous waste combustor firing system operating limits.

The procedures for AWFCO events specified in the O& M plan must include a statement that the ramp down must begin immediately upon initiation of automatic waste feed cutoff and must prescribe a bona fide ramping down.

(d) After an AWFCO event, the Permittee shall not restart the hazardous waste feed until the operating parameters and emission levels are within their respective limits.

(e) If after any AWFCO event, there is an exceedance of an emission standard or operating requirement, irrespective of whether the exceedance occurred while hazardous waste remained in the combustion chamber, the Permittee shall:

(1) Investigate the cause of the AWFCO,

(2) Take appropriate corrective measures to minimize future AWFCOs, and

(3) Record the findings and corrective measures in the operating record.

D.13.9 Leak Detection and Repair (LDAR) Program [326 IAC 2-2-3, 40 CFR Part 63 Subpart DD, 40 CFR Part 61 Subpart V]

The LDAR standards that apply to components associated with the waste transfer/feed systems connected to the T149 solid-liquid waste incinerator are described in Section E.2 of this permit.

D.13.10 Inspection Requirements [and 40 CFR 63.1206(c)]

(a) In order to satisfy the HWC MACT standards [40 CFR 63.1206(c)(5)], the Permittee shall conduct daily visual inspections of the T149 solid-liquid waste incinerator to ensure the combustion zone is sealed.

(b) In order to satisfy the HWC MACT standards [40 CFR 63.1206(c)(3)(vii)], the Permittee shall test the AWFCO system and associated alarms at least once per week to verify operability, unless the operating record documents that the weekly inspections unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, the Permittee shall conduct operability testing monthly.

D.13.11 Training and Certification Requirements [40 CFR 63.1206(c)(6)]

(a) Pursuant to the HWC MACT standards [40 CFR 63.1206(c)(6)], the Permittee shall establish a Training and Certification Program for all categories of personnel whose activities may reasonably be expected to directly affect emissions of HAPs from all operations associated with the T149 solid-liquid waste incinerator.

Said programs shall be of a technical level commensurate with the person’s duties as specified in the training manual. All operating training and certification programs shall be recorded in the operating record.

(b) A certified control room operator shall be on duty at the site at all times the T149 solid-liquid waste incinerator is in operation and the T149 solid-liquid waste incinerator, including associated air pollution control equipment and continuous monitoring systems, shall be operated and maintained at all times by persons who are trained and certified according to the Training and Certification Program.

D.13.12 Plans and Procedures [326 IAC 2-2-3, 40 CFR 63.1206, 40 CFR 63.1211, 326 IAC 2-7-5(13)]

In order to satisfy the HWC MACT Standards [40 CFR 63.1206] and the PSD BACT requirements [326 IAC 2-2-3], the Permittee shall develop and implement the following written plans, which shall be maintained in the operating record:

(a) Operations and Maintenance (O&M) Plan – The O&M Plan shall define operations during periods of normal operation pursuant to 40 CFR 63.1206(c)(1) and (7). The O&M Plan required under the HWC MACT standards shall satisfy the requirements of the 326 IAC 1-6-3 Preventive Maintenance Plan.

(b) Startup, Shutdown, and Malfunction (SSM) Plan – The SSM Plan shall be developed and implemented in accordance with 40 CFR 63.1206(c)(2), to ensure that the T149 solid-liquid waste incinerator, including associated air emission control equipment and CEMS and CMS, is operated and maintained during periods of startup, shutdown, and malfunction and that all malfunctions are corrected as soon as practicable after their occurrence in order to minimize excess emissions. The SSM Plan shall contain the following information:

  (1) Detailed procedures for operating and maintaining the T149 solid-liquid waste incinerator system, including associated CEMS and CMS equipment, during periods of startup, shutdown, and malfunction; and

  (2) Corrective action program for malfunctioning process, air pollution control, CEMS, and CMS equipment.

(c) Emergency Safety Vent (ESV) Operating Plan – The ESV Operating Plan shall be developed and implemented in accordance with 40 CFR 63.1206(c)(4). The emission standards and operating plans apply even if hazardous waste is in the combustion chamber.

(d) Feedstream Analysis Plan – The Feedstream Analysis Plan shall be developed and implemented in accordance with 40 CFR 63.1209(c)(2) for those parameters with feed rate limits defined in Condition D.13.15.

(e) Continuous Emissions Monitoring System (CEMS) Standard Operating Procedures (SOP) – The Permittee shall prepare and implement an SOP that provides step-by-step procedures and operations of the CEMS in accordance with 326 IAC 3-5-4(c)(9) – Preventive maintenance procedures and corrective maintenance procedures that include those procedures taken to ensure continuous operation and to minimize malfunctions.

Testing and Monitoring Requirements [326 IAC 2-7-6(1) (6)] [326 IAC 2-7-5(1)]

D.13.13 Performance Test Requirements [40 CFR 63.1207, 326 IAC 2-1.1-11, 326 IAC 3-6]

The following streamlined performance test requirements shall satisfy the NESHAP General Provisions [40 CFR 63.7], the HWC MACT requirements [40 CFR 63.1207 and 63.1209], the PSD BACT requirements for VOC and fluorides [326 IAC 2-1.1-11] and the State emission testing requirements [326 IAC 3-6]:

(a) Comprehensive Performance Tests:

  (1) The Permittee shall submit a notification of intention to conduct a comprehensive performance test and CMS performance evaluation and a site-specific test plan and CMS performance evaluation test plan at least one year before the performance test and performance evaluation are scheduled to begin.

  (2) The Permittee shall perform initial comprehensive performance tests within 12

months after the HWC MACT compliance date unless an exemption is granted pursuant to 40 CFR 63.1207(e)(3).

(3) The Permittee shall submit a notification of intention to conduct the comprehensive performance test at least 60 calendar days before the test is scheduled to begin.

(4) The comprehensive performance tests shall be conducted under operating conditions representative of the extreme range of normal conditions as specified in 40 CFR 63.1207(g) and 63.7(e)(1) for the worst case mode associated with each applicable pollutant limit or emission standard.

(5) The operating parameters defined in Condition D.12.15 shall be monitored during the performance test to establish the parametric limits.

(6) All required comprehensive performance testing shall be completed within 60 days after the date of commencement of the tests pursuant to 40 CFR 63.1207(d)(3).

(7) The Permittee may use previous emissions test data in lieu of the initial comprehensive performance tests as allowed under 40 CFR 63.1207(c)(2).

(8) Pursuant to 40 CFR 63.7(h)(2), individual performance tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the relevant standard(s) on a continuous basis, or the source is being operated under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering the request.

(9) Pursuant to 40 CFR 63.1207(j), the Permittee shall:

(A) Postmark a Notification of Compliance (NOC) documenting compliance or noncompliance with the emission standards and continuous monitoring system requirements and identify operating parameter limits under 40 CFR 63.1209 within 90 days of completion of the comprehensive performance test; and

(B) Comply with all operating requirements specified in the NOC in lieu of the limits specified in the Documentation of Compliance required under 40 CFR 63.1211(c) upon postmark of the NOC.

These submittal requirements satisfy the reporting requirements of 326 IAC 3-6 as allowed under extension provisions of 326 IAC 3-6-4(b).

(b) Confirmatory Performance Tests

(1) The Permittee shall submit a notification of intention to conduct a confirmatory performance test and CMS performance evaluation and a site-specific test plan and CMS performance evaluation test plan at least 60 days before the performance test and performance evaluation are scheduled to begin.

(2) The confirmatory performance tests shall be conducted under operating conditions representative of the range of normal conditions as specified in 40 CFR 63.1207(g)(2) and 63.7(e)(1) for the parameters specified in 40 CFR 63.1207(g)(2) associated with the dioxin/furan emission standard unless the Administrator approves an alternative range under 40 CFR 63.1207(g)(v).

(3) The operating parameters defined in Condition D.13.15 shall be monitored during the performance test.

(4) All required comprehensive performance testing shall be completed within 60 days after the date of commencement of the tests pursuant to 40 CFR 63.1207(d)(3).

(5) Pursuant to 40 CFR 63.7(h)(2), individual performance tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the relevant standard(s) on a continuous basis, or the source is being operated under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering the request.

(6) Pursuant to 40 CFR 63.1207(j), the Permittee shall postmark a Notification of Compliance (NOC) documenting compliance or noncompliance with the applicable dioxin/furan emission standard within 90 days of completion of the confirmatory performance test.

This submittal requirement satisfies the reporting requirements of 326 IAC 3-6 as allowed under extension provisions of 326 IAC 3-6-4(b).

(c) Subsequent Performance Tests

The Permittee shall conduct subsequent Comprehensive Performance Tests and Confirmatory Performance Tests at the frequencies specified in 40 CFR 63.1207(d).

(d) Pursuant to 326 IAC 3-6-4(b) and 40 CFR 63.1207(i)(2), the Permittee shall submit the performance test reports within 90 days following the test.

D.13.14 Continuous Emissions Monitoring Systems (CEMS) Operating Requirements [40 CFR Part 60 Appendix B, 40 CFR Part 60 Appendix F, 40 CFR 63.8, 326 IAC 2-1.1-11, 326 IAC 3-5, US EPA approved Alternative Monitoring Petition initially approved January 27, 2006]

(a) CO and O_2 CEMS Operation Requirements – The following requirements shall be applied at all times the T149 solid-liquid waste incinerator is in operation and represent the streamlined requirements of the HWC MACT standards for CO and HC [40 CFR 63.1209(a), (d), (e), (f), and (h)], PSD BACT requirements for CO and VOC [326 IAC 2-1.1-11], and the emission monitoring requirements for MACT and PSD sources [326 IAC 3-5-1(b) and (d)]:

(1) The Permittee shall install and operate the CO and O_2 CEMS in accordance with the QA requirements of the HWC MACT standards [40 CFR Part 63 Appendix to Subpart EEE], the applicable QC and performance evaluation requirements of 40 CFR 63.1209(d), the applicable performance specification requirements of 40 CFR 60, Appendix B, and the Alternative Monitoring Petition ("AMP") initially approved on January 27, 2006 and all subsequent revisions to the AMP.

(2) The CEMS shall be installed and operational upon certification of the DOC for the HWC MACT.

(3) Continuous monitor means a device which continuously samples the regulated parameter without interruption, evaluates the detector response at least once every 15 seconds and computes and records the average at least every 60 seconds, except during allowable periods of calibration and other exceptions

identified in applicable requirements, plans and/or procedures. One-minute average means the average of detector responses calculated at least every 60 seconds from response obtained at least every 15 seconds.

(b) SO_2 and NOx CEMS Operation Requirements – The following requirements shall apply when the T149 solid-liquid waste incinerator is burning waste:

(1) The Permittee shall install and operate the SO_2 and NOx CEMS in accordance with the QA/QC criteria set forth in 40 CFR 60, Appendix B, 40 CFR 60, Appendix F, Procedure 1, and the AMP approved on January 27, 2006.

(2) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period.

(3) The Startup, Shutdown, and Malfunction (SSM) Plan required by Condition D.13.12 (b) shall include procedures for monitoring and recording the following information during times of SO_2 or NOx CEMS malfunction:

(A) When the SO_2 CEMS malfunctions, the Permittee shall monitor and record the Hydro-Sonic™ equivalent pressure drop and scrubber liquid flow rate as required by Condition D.13.15 (a) and the scrubber liquid pH as required by Condition D.13.15 (a).

(B) When the NOx CEMS malfunctions, the Permittee shall monitor and record the combustion chamber temperature, combustion air flow rate, and primary and secondary waste feed rates as required by Condition D.13.15 (a), and assess NOx emissions, using waste testing, waste shipment and process knowledge, to determine whether the quantity of nitrogen fed into the incinerator during that time could have exceeded the worst case 24-hour daily average nitrogen feed rate of 1,379 pounds per hour that formed the basis of the NOx BACT limit.

(c) Particulate Matter [PM] CEMS Alternative Operating Scenario Requirements – This permit provides the Permittee with the following Alternative Operating Scenario for purposes of satisfying the monitoring requirements of 40 CFR 63.1209. The Permittee shall operate the PM CEMS at all times the T149 solid-liquid waste incinerator is in operation, except as provided in paragraphs (3) or (4) below.

(1) The Permittee shall install and operate the PM CEMS in accordance with the QA/QC criteria set forth the AMP approved on January 27, 2006, and all subsequent revisions to the AMP.

(2) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period. In order to calculate a valid one-hour block average, valid results must be available for at least three of the four 15-minute cycles in each hour.

(3) During periods when the PM CEMS is malfunctioning or inoperative, the Permittee may use data from the Multi-Metal CEMS, as provided in the AMP approved January 27, 2006.

(4) In lieu of operating the PM CEMS, the Permittee may satisfy the monitoring requirements of 40 CFR 63.1209 through operation of the Continuous Monitoring System requirements described in Section D.13.15(a).

(d) Multi-Metals [MMX] CEMS Alternative Operating Scenario Requirements –

This permit provides the Permittee with the following Alternative Operating Scenario for purposes of satisfying the monitoring requirements of 40 CFR 63.1209. The Permittee shall operate the MMX CEMS at all times the T149 solid-liquid waste incinerator is in operation, except as provided in paragraphs (3) or (4) below.

(1) The Permittee shall install and operate the MMX CEMS in accordance with the QA/QC criteria set forth the AMP approved on January 27, 2006, and all subsequent revisions to the AMP.

(2) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period. In order to calculate a valid one-hour block average, valid results must be available for at least three of the four 15-minute cycles in each hour.

(3) During periods when the MMX CEMS is malfunctioning or inoperative, the Permittee may use data from the PM CEMS, as provided in the AMP approved on January 27, 2006 and all subsequent revisions to the AMP.

(4) In lieu of operating the MMX CEMS, the Permittee may satisfy the monitoring requirements of 40 CFR 63.1209 through operation of the Continuous Monitoring System requirements described in Section D.13.15(a).

(e) Hydrogen Chloride [HCl] CEMS Alternative Operating Scenario Requirements –
This permit provides the Permittee with the following Alternative Operating Scenario for purposes of satisfying the monitoring requirements of 40 CFR 63.1209. The Permittee shall operate the HCl CEMS at all times the T149 solid-liquid waste incinerator is in operation, except as provided in paragraphs (3) or (4) below.

(1) The Permittee shall install and operate the HCl CEMS in accordance with the QA/QC criteria set forth the AMP approved on January 27, 2006, and all subsequent revisions to the AMP.

(2) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period.

(3) In lieu of operating the HCl CEMS, the Permittee may satisfy the monitoring requirements of 40 CFR 63.1209 through operation of the following Continuous Monitoring System requirements described in Section D.13.15(a).

D.13.15 Parametric Continuous Monitoring Systems (CMS) Requirements [40 CFR 63.8(c), 40 CFR 63.1209, 326 IAC 2-1.1-11]

(a) The Permittee shall operate the following CMSs in accordance with the quality assurance requirements specified in 40 CFR 63.1209(d) at all times the T149 solid-liquid waste incinerator is in operation. To satisfy the HWC MACT standards [40 CFR 63.1209(b), (d), (e), (f), and (h)] and the requirements for PSD sources [326 IAC 2-1.1-11], the following parameters shall be monitored at all times the T149 solid-liquid waste incinerator is in operation. The Permittee shall operate the CMS as provided in the table below. The CEMS mode is when the HCl CEMS, and either the PM and/or the Metal CEMS are in operation in accordance with Condition D.13.14. If the Permittee is not operating in CEMS mode, then the CMS in the Parametric Mode must be monitored.

Operating Parameter	Monitor when in CMS Parametric Mode	Monitor when in CEMS Mode	Averaging Period	Units	Parameter for
Maximum Primary Waste Feed to Primary Combustion Chamber	X	X	1-hr RA	lbs/hr	D.13.5(e) D.13.5(f)
Maximum Secondary Waste Feed to Primary Combustion Chamber	X	X	1-hr RA	lbs/hr	D.13.5(e) D.13.5(f)
Maximum Solid Feed Rate	X	X	1-hr RA	lbs/hr	D.13.5(e) D.13.5(f)
Minimum Primary Combustion Chamber Temperature	X	X	1-hr RA	^{o}F	D.13.5(e) D.13.5(f)
Maximum Primary Waste Feed to Secondary Combustion Chamber	X	X	1-hr RA	lbs/hr	D.13.5(e) D.13.5(f)
Maximum Secondary Waste Feed to Secondary Combustion Chamber	X	X	1-hr RA	lbs/hr	D.13.5(e) D.13.5(f)
Minimum Secondary Combustion Chamber Temperature	X	X	1-hr RA	^{o}F	D.13.5(e) D.13.5(f)
Maximum Stack Gas Flow Rate	X	X	1-hr RA	dscfm	D.13.2(a) D.13.5(a) D.13.5(b) D.13.5(c) D.13.5(d) D.13.5(e) D.13.5(f)
Maximum waste feed viscosity	X	X	Monthly Analysis	Centi-poise	D.13.5(f)
Minimum Waste Atomizing Pressure	X	X	1-hr RA	psig	D.13.5(f)
Maximum Particulate Matter (PM) limit		X	6-hr RA	mg/dscm	D.13.2
Maximum HCl/Cl_2 emissions		X	12-hr RA	ppmv	D.13.5(d)
Maximum Mercury Emissions		X	12-hr RA	ug/dscm	D.13.5(a)
Maximum SVM emissions		X	12-hr RA	ug/dscm	D.13.5(b)
Maximum LVM Emissions		X	12-hr RA	ug/dscm	D.13.5(c)

Operating Parameter	Monitor when in CMS Parametric Mode	Monitor when in CEMS Mode	Averaging Period	Units	Parameter for
Maximum mercury feed rate in all feed streams	X		12-hr RA	lbs/hr	D.13.5(a)
Maximum SVM feed rate in all feed streams	X		12-hr RA	lbs/hr	D.13.5(b)
Maximum LVM feed rate in all feed streams	X		12-hr RA	lbs/hr	D.13.5(c)
Maximum LVM feed rate in all pumpable feed streams	X		12-hr RA	lbs/hr	D.13.5(c)
Maximum ash feed rate in all feed streams	X		12-hr RA	lbs/hr	D.13.2
Maximum Total Chlorine feed rate in all feed streams	X		12-hr RA	lbs/hr	D.13.5(d)
Minimum Condenser/Absorber pressure drop	X		1-hr RA	in w.c.	D.13.5(a) D.13.5(b) D.13.5(c) D.13.5(d)
Minimum Condenser/Absorber liquid feed pressure	X		1-hr RA	psig	D.13.5(a) D.13.5(b) D.13.5(c) D.13.5(d)
Minimum Condenser/Absorber scrubber water pH	X		1-hr RA	pH	D.13.5(d)
Minimum Condenser/Absorber scrubber liquid flow rate	X		1-hr RA	gpm	D.13.5(a) D.13.5(b) D.13.5(c) D.13.5(d)
Minimum Hydro-Sonic Scrubber Equivalent Pressure Drop	X		1-hr RA	in w.c.	D.13.2 D.13.5(a) D.13.5(b) D.13.5(c) D.13.5(d)
Maximum Hydro-Sonic Scrubber conductivity	X		12-hr RA	% solids	D.13.2 D.13.5 (a) D.13.5(b) D.13.5(c)

Operating Parameter	Monitor when in CMS Parametric Mode	Monitor when in CEMS Mode	Averaging Period	Units	Parameter for
Minimum Hydro-Sonic Scrubber Liquid Feed Rate	X		1-hr RA	gpm	D.13.2 D.13.5(a) D.13.5(b) D.13.5(c) D.13.5(d)
Minimum Hydro-Sonic Scrubber water pH	X		1-hr RA	pH	D.13.5(d)

(b) Continuous operation is defined as the collection of at least one measurement for each successive 15-second period, regardless of startup, shutdown and malfunction.

(c) Pursuant to the HWC MACT standards [40 CFR 63.1209(a)(5)] and the compliance monitoring methods for PSD sources [326 IAC 2-1.1-11], the Permittee may petition the Administrator to use CEMS for compliance monitoring in lieu of compliance with the operating parameter limits established in (a) of this condition.

(d) If applicable, the Permittee may document compliance using the waiver provisions of 40 CFR 63.1207(m) in lieu of complying with (a) and (c) of this condition.

D.13.16 Fuel Oil Sampling and Analysis for SO_2 [326 IAC 2-1.1-11] [326 IAC 3-7-4]

Pursuant to 326 IAC 3-7-4, the Permittee shall maintain sampling and analysis certification records of the fuel oil sulfur content in accordance with approved ASTM methods.

D.13.17 Minimum Data Requirements – SO_2 and NOx Compliance [326 IAC 2-1.1-11]

The following defines when CEMS data must be supplemented with data required by condition D.13.14 (b)(3), D.13.18 (a)(13), and D.13.19 (a)(2):

(a) When the period of incinerator operation (i.e., receiving waste streams) is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours, or

(b) When the period of incinerator operation (i.e., receiving waste streams) is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.

(c) Monitoring data are insufficient to constitute a valid hour of data if measured values are unavailable for any of the required 15-minute periods within the hour.

Record Keeping and Reporting Requirement [326 IAC 2-7-5]

D.13.18 Record Keeping Requirements

(a) The Permittee shall maintain the following records:

(1) Notifications, reports, and other documents, such as the Documentation of Compliance, as required by 40 CFR 63.1200, 63.1211(c), and 63.10(b) and (c).

(2) All data recorded by continuous monitoring systems (CMS), including continuous emission monitoring systems (CEMS), required by Conditions D.13.14, D.13.15,

and D.13.17;

(3) Documentation that a change will not adversely affect compliance with the emission standards or operating requirements as required by 40 CFR 63.1206(b)(5)(ii);

(4) Records of the estimated hazardous waste residence time as required by 40 CFR 63.1206(b)(11);

(5) Plans and procedures as required by Condition D.13.12;

(6) Documentation of the results of the investigation, corrective measures taken, and evaluation of excessive exceedances during malfunctions as required by 40 CFR 63.1206(c)(2)(v)(A);

(7) Corrective Measures for any AWFCO that results in an exceedance of an applicable emission standard or operating parameter limit as required by 40 CFR 63.1206(c)(3)(v);

(8) Documentation and results of the AWFCO operability testing as required by Condition D.13.10 (b) and 40 CFR 63.1206(c)(3)(vii);

(9) Corrective measures for any ESV opening as required by 40 CFR 63.1206(c)(4)(iii);

(10) Daily visual inspection records of the T149 solid-liquid waste incinerator to ensure the combustion zone is sealed as required by Condition D.13.10 (a) and 40 CFR 63.1206(c)(5);

(11) A copy of the Operator Certification and Training Program required by Condition D.13.11 and 40 CFR 63.1206(c)(6); and

(12) Documentation of the changes in modes of operation as required by 40 CFR 63.1209(q).

(13) For days when condition D.13.17 requires that CEMS data must be supplemented, the documentation of the information required by Condition D.13.14 (b)(3).

(14) The time periods in which the Permittee is operating in CEMS mode as the primary monitoring scenario or the CMS systems described in D.13.15 as the primary monitoring scenario.

(b) The record keeping and reporting requirements for the LDAR standards are described in Section E.2 of this permit.

(c) The Permittee shall maintain quarterly records of all fuel oil used in the T149 solid-liquid waste incinerator on a calendar month average basis, for the following:

(1) Sulfur content;

(2) Heat content;

(3) Fuel consumption; and

(4) Sulfur dioxide emission rate in pounds per MMBtu.

D.13.19 Reporting Requirements

(a) Quarterly Reporting Requirements

(1) The following streamlined quarterly reporting requirements shall satisfy the HWC MACT standards [40 CFR 63.1211], which references the MACT General Provisions [63.7-63.10], PSD BACT requirements [326 IAC 2-1.1-11], and the continuous emissions monitoring requirements [326 IAC 3-5]:

(A) Reports shall be submitted in accordance with Condition C.18;

(B) Summary reports of excess emissions, parameter exceedances, and monitor downtime including information specified in 63.10(c)(5-(c)(13);

(C) SSM summary reports for the T149 solid-liquid waste incinerator control system, including associated CEMS and CMS equipment;

(D) Excessive exceedances report, if applicable, as required by 40 CFR 63.1206(c)(3)(vi); and

(E) Emergency safety vent opening reports as require by 40 CFR 63.1206(c)(4)(iv); and

(2) In addition to the requirements described in (a)(1) of this condition, the Permittee shall report the following information for the NOx and SO_2 CEMS to satisfy the PSD BACT requirements [326 IAC 2-1.1-11]:

(A) A list of days when condition D.13.17 requires that CEMS data must be supplemented

(B) A detailed report for each day when condition D.13.17 requires that CEMS data must be supplemented that provides:

(i) the information required by Condition D.13.14 (b)(3), and

(ii) an analysis of whether that information indicates continuous compliance with the limit established in Condition D.13.3 or D.13.4, and if the NOx CEMS malfunctions for greater than six continuous hours, an assessment of NOx emissions using waste testing, waste shipment, and process knowledge whether the quantity of nitrogen fed into the incinerator during that time could have exceeded the worst case 24-hour daily average nitrogen feed rate of 1,379 pounds per hour that formed the basis of the NOx BACT limit.

(b) Immediate Reporting Requirements

(1) The Permittee shall submit any revision to the SSM Plan that may significantly increase emissions of hazardous air pollutants to the Administrator for approval within 5 days after making a change to the plan to satisfy the reporting requirements under the HWC MACT standards [40 CFR 63.1206(c)(2)(ii)(C)].

(2) The reporting requirements in the HWC MACT standards [40 CFR 63.1211] for Startup, Shutdown and Malfunction (SSM) shall be used to satisfy the reporting requirements under the HWC MACT standards and PSD BACT requirements [326 IAC 2-2-3].

(A) The Permittee shall report all actions taken during T149 solid-liquid waste incinerator system SSM event that results in an exceedance of a relevant emission standard when those actions are inconsistent with the procedures specified in the SSM Plan. The immediate report shall be submitted to the agency via a telephone call or facsimile within 2 working days after commencing actions inconsistent with the plan.

(B) Within 7 working days after the end of an SSM event that results in an exceedance of a relevant emission standard when those actions taken by the Permittee are inconsistent with the procedures specified in the SSM Plan, the Permittee shall submit a letter containing the following information:

(i) Name, title and signature of responsible official certifying accuracy;

(ii) Explanation of the circumstances of the event;

(iii) Reason for not following the SSM Plan;

(iv) Report any excess emissions and/or parameter monitoring exceedances are believed to have occurred; and

(v) Action taken to minimize emissions.

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12, 326 IAC 2-2]

D.13.20 Modifications and Construction: Advance Approval of Permit Conditions

(a) The Permittee may modify any existing emission units listed in this section of the permit without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the modified emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

(b) The Permittee may construct and install new emission units of the types described in this D section without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the new emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

SECTION D.14 BCM CONTROL SYSTEMS – RTO OPERATIONS CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14)]:

(a) The following emissions units are subject to applicable requirements described in this D section:

Emission Unit Description	Building	Stack/Vent	Nominal Capacity	Control Device
Regenerative Thermal Oxidizer 1 (RTO1)	RTO1	RTO1 Stack	36 MMBtu/hr	Caustic Scrubber System
Regenerative Thermal Oxidizer 2 (RTO2)	RTO2	RTO2 Stack	36 MMBtu/hr	Caustic Scrubber System

The RTO control system consists of two Regenerative Thermal Oxidizers, identified as RTO1 and RTO2, each equipped with caustic scrubbing systems and each exhausting to individual stacks.

The closed vent system (CVS) associated with the RTO control system begins at the production building process, storage, and waste tank vent lines and ends at the entrance of the RTO control system. The positive pressure portions of the CVS are at the outlet of the production building roof fans exhausting to the RTO fume transports system, and up to the inlet side of the tank conservation vents of the tank modules exhausting to the RTO fume transport system.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.14.0 Requirement to Control Emissions [40 CFR Part 60 Subpart Kb, 40 CFR Part 63 Subparts GGG, DD, FFFF, 326 IAC 2-2-3, and 326 IAC 8-5-3]

Except for equipment excluded from emission control requirements and except as otherwise provided by statute or rule, or in this permit, the fumes from all emission units which reference this section shall be continuously routed to the RTO control system while emission units vented to the control equipment are in operation. Except as otherwise provided by statute or rule, or in this permit, the RTO control system shall be operated at all times that the emission units vented to the control equipment are in operation. If the emission standard can be achieved during an RTO Fume Transport System bypass event, regardless of the cause of the event, then routing emissions to the RTO control system is not required.

D.14.1 Control Device and Closed Vent System Standards [40 CFR 63.1253(b), (c), and (d), 63.1254(a) and (c), 63.1256(b), (e), and (h), 63.1258(b), 40 CFR 63.685(c) and (d), 63.689(b), 63.690(b), 63.693(f), 40 CFR 63.2455, 63.2460, 63.2470, 63.2475, 63.2485, 40 CFR 63.148, 40 CFR 60.112b(a) and 60.113b(c), 326 IAC 2-2-3, and 326 IAC 8-5-3(b)]

(a) RTO Control Device Standards – The RTO control device standards shall apply at all times the unit is burning waste fume streams, except as provided in Condition D.14.2 (a):

(1) Carbon Monoxide (CO) – PSD BACT requirements [326 IAC 2-2-3] for CO are good combustion practices to limit CO emissions at the outlet of the RTO system to no more than 73 parts per million by volume (ppmv) based on a 24-hour daily average.

(2) Oxides of Nitrogen (NOx) – In order to satisfy PSD BACT requirements [326 IAC 2-2-3], NOx emissions at the outlet of the RTO system shall not exceed a 24-hour daily average of 91 ppmv.

(3) Sulfur Dioxide (SO_2) – In order to satisfy PSD BACT requirements [326 IAC 2-2-3], SO_2 emissions, as measured at the outlet of the RTO system, shall not exceed a 24-hour daily average of 100 ppmv.

(4) Volatile Organic Compounds (VOC)/Volatile Organic Hazardous Air Pollutant (VOHAP) – In order to satisfy the Pharmaceutical MACT requirements [40 CFR 63.1253(b), (c), and (d), 63.1254(a) and (c), and 63.1256(b), (e) and (h), and 63.1258(b)], Offsite Waste and Recovery Operations MACT requirements [40 CFR 63.685(c) and (d), 63.689(b), 63.690(b), and 63.693(f)], MON requirements [40 CFR 63.2450(c)(2), 63.2455, 63.2460, 63.2470, 63.2475, 63.2485, 63.2505], PSD BACT requirements [326 IAC 2-2-3], Synthetic Pharmaceutical RACT requirements [326 IAC 8-5-3(b)], and New Source Performance Standards for Volatile Organic Liquid Storage Vessel requirements [40 CFR 60.112b(a) and 60.113b(c)], the Permittee shall meet one of the following streamlined VOC/VOHAP emission standards:

(A) Concentration Emission Standard:

(i) The VOC/VOHAP emissions shall be controlled by a RTO to a volumetric concentration of no more than 20 parts per million (ppmv) based on a 24-hour daily average;

(ii) The RTO combustion chamber temperature shall not be less than 1500°F over a 24-hour daily average; and

(iii) The RTO combustion chamber residence time shall not be less than 0.75 seconds over a 24-hour daily average, which is equivalent to a maximum 24-hour daily average stack exhaust air flow rate of 3340 standard cubic feet per second; or

(B) Control Efficiency Emission Standard:

(i) The RTO shall reduce VOC/VOHAP emissions by a control efficiency of 98% or more;

(ii) The 24-hour daily average RTO combustion chamber temperature shall not be less than the value established from a compliant stack test; and

The Permittee shall conduct a performance test for TOC before the control efficiency monitoring approach is used to assess compliance with this control efficiency standard.

(5) Hydrogen Halide/Halogen and Fluorides – In order to satisfy the Pharmaceutical MACT requirements [40 CFR 63.1253(b), (c), and (d), 63.1254(a) and (c), 63.1256(b), (e) and (h), and 63.1258(b)] and PSD BACT requirements for fluorides [326 IAC 2-2-3], the Permittee shall meet one of the following hydrogen halide and halogen emission standards. The control standards for halogenated vent streams from miscellaneous organic chemical manufacturing process units are included as an Alternative Operating Scenario in Condition D.14.12(a) of this permit and are excluded from the standards in this condition.

(A) Concentration Emission Standard:

(i) Hydrogen halide and halogen emissions shall be controlled by a caustic scrubbing system to achieve no more than 20 parts per million (ppmv) based on a 24-hour daily average; or

(B) Control Efficiency Emission Standard:

(i) The RTO shall reduce hydrogen halide and halogen emissions by at least 98%;

(ii) The 24-hour daily average scrubber effluent pH of the caustic scrubbing system shall not be less than the value established from a compliant stack test;

(iii) The 24-hour daily average scrubber liquid flow rate of the caustic scrubbing system shall not be less than the value established from a compliant stack test; and

The Permittee shall conduct a performance test for HCl before the control efficiency monitoring approach is used to assess compliance with this control efficiency standard.

(b) RTO Closed Vent System Inspection Standards – The following inspection standards shall apply to the RTO closed vent system (CVS), except as provided in Condition D.14.2 (b):

(1) The Permittee shall comply with the following closed vent system inspection requirements to satisfy the Pharmaceutical MACT requirements [40 CFR 63.1256(b)(3) and (e)(1) and 63.1258(h)], Offsite Waste MACT requirements [40 CFR 63.685(g), 63.689(b), 63.690(b), 63.693(b) and (c), and 63.695(c)], MON requirements [40 CFR 63.983] and PSD BACT requirements [326 IAC 2-2-3]:

(A) Initial one-time Method 21 inspections shall be conducted on new portions of the RTO closed vent system not operated under negative pressure within 150 days after startup, if not subject to the LDAR requirements established in Section E of this permit.

(B) Portions of the CVS that are operated under negative pressure shall be equipped with a pressure gauge or other pressure measurement/ detection. The data output must be viewable from a readily accessible location to verify that negative pressure is being maintained when waste fume streams are going to the control system.

(C) Annual inspections of the RTO closed vent system shall be performed for visible cracks, holes or gaps, loose connections, broken or missing caps, and visible, audible or olfactory indication of leaks.

(D) Repair of any leak detected on the RTO closed vent system shall be initiated no later than 5 calendar days after identification, and completed within 15 days after identification, unless:

(i) The repair is technically infeasible without a shutdown of an operation or process; or

(ii) It is determined that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair.

Repairs delayed due to either of the causes described in (A) or (B) shall be completed by the end of the next shutdown.

(2) The Permittee shall monitor each bypass line on the RTO closed vent system to satisfy the Pharmaceutical MACT requirements [40 CFR 63.1252(b), 63.1253(b) and (c), and 63.1258(b)], Offsite Waste MACT requirements [40 CFR 63.685(g), 63.689(b), 63.690(b), and 63.693(c)], MON requirements [40 CFR 63.2450(e), 63.982(c), 63.983(a), 63.998(d)], HON requirements [40 CFR 63.114(d), 63.118(a), 63.148(f)] and PSD BACT requirements [326 IAC 2-2-3] using one of the following methods:

(A) Install and monitor the position of the closed vent system bypass valve at least once every 15 minutes, where the closed position means there is no bypass flow; or

(B) Secure the bypass line valve in the closed position with a car seal or lock and key type configuration. Monthly visual inspections of seal or locking device shall be performed to ensure the seal is not broken or the valve is in the closed position and the vent stream is not diverted through the bypass line.

D.14.2 Exceptions to RTO Control System Standards [40 CFR 60.9(c), 40 CFR 63.1250(g) and 63.1252(a), 40 CFR 63.681, 63.685(g), 63.693(b), 40 CFR 63.2450(a) and (p) and 326 IAC 2-2-3]

(a) Exceptions to RTO Control Device Operational Standards – The following streamlined standards satisfy the NSPS for Volatile Organic Liquid Storage [40 CFR 60.9(c)], Pharmaceutical MACT standards [40 CFR 63.1250(g) and 63.1252(a)], Offsite Waste MACT standards [40 CFR 63.681, 63.685(g) and 63.693(b)], MON standards [40 CFR 63.2450(a) and (p)], HON standards [40 CFR 63.114(d), 63.118(a), 63.148(f)] and PSD BACT requirements [326 IAC 2-2-3]:

(1) The Permittee may open a safety device and bypass the RTO system at any time conditions require it to do so to avoid unsafe conditions.

(2) The provisions of Conditions D.14.1 (a) shall not apply during periods of startup, shutdown or malfunction that preclude the Permittee from complying with Condition D.14.1 (a). This exemption does not apply to requirements under the Pharmaceutical MACT standards.

(b) Exceptions to RTO Closed Vent System Inspection Standards – The following streamlined standards satisfy the Pharmaceutical MACT standards [40 CFR 63.1258(h)(6) and (7)], MON standards [40 CFR 63.2485, 63.148(g) and (h)], HON standards [40 CFR 63.148(g) and (h)] and PSD BACT requirements [326 IAC 2-2-3]:

(1) The Permittee is not required to inspect if unsafe or difficult to inspect. The Permittee must have a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times (for unsafe inspections) or at least once every 5 years (for difficult inspections).

D.14.3 Startup, Shutdown, and Malfunction Requirements for RTO Control System [40 CFR 60.8(c), 40 CFR 63.1250(g), 40 CFR 63.697(b)(3), 40 CFR 63.2540 and MON Table 12, 326 IAC 2-2-3]

(a) At all times, the Permittee must operate and maintain processes and associated air pollution control equipment and monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required have been achieved.

(b) Volatile Organic Liquid Storage Vessel Standards [40 CFR 60.7, 40 CFR 60.8(c)], Offsite Waste MACT [40 CFR 63.697(b)(3)], MON [40 CFR 63.2540 and Table 12] and PSD BACT [326 IAC 2-2-3] SSM Requirements

(1) The Offsite Waste MACT and MON requirements for Startup, Shutdown, and Malfunction (SSM) [40 CFR 63.697(b)(3)] are applicable to SSM events involving emission units and processes subject to the Volatile Organic Liquid Storage Vessel standards [40 CFR 60.7, 40 CFR 60.8(c)], Offsite Waste MACT standards, MON standards and/or PSD BACT requirements [326 IAC 2-2-3].

(2) Pursuant to 40 CFR 63.697(b)(3) and 63.2540, the Permittee shall develop an SSM Plan to ensure that processes and air pollution control devices subject to the Offsite Waste MACT, MON and PSD BACT requirements are operated and maintained in a manner to prevent or minimize excess emissions to the extent practical [40 CFR 63.6(e)].The SSM Plan shall contain the following information:

(A) Detailed plans and/or procedures for operating and maintaining the processes and RTO system, including associated CEMS and CMS equipment, during periods of startup, shutdown, and malfunction; and

(B) Corrective action program for malfunctioning processes and air pollution control equipment, CEMS, and CMS equipment.

(c) Pharmaceutical MACT Requirements [40 CFR 63.1250(g)]

(1) In response to an action to enforce the Pharmaceutical MACT standards, the Permittee may assert an affirmative defense to a claim for civil penalties for exceedances of such standards that are cause by a malfunction by meeting the notification requirements in Section D.14.10 and proving by a preponderance of evidence the following:

(A) The excess emissions were caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, or a process to operate in a normal and usual manner; and could not have been prevented through careful planning, proper design, or better operation and maintenance practices; and did not stem from any activity or event that could have been foreseen and avoided, or planned for; and were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;

(B) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs;

(C) The frequency, amount, and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions;

(D) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(E) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment, and human health;

(F) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices;

(G) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs;

(H) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions; and

(I) The owner or operator has prepared a written root cause analysis, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using the best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

D.14.4 Reserved

Testing and Monitoring Requirements [326 IAC 2-7-5(1), 326 IAC 2-7-6(1)]

D.14.5 Continuous Emissions Monitoring System (CEMS) Requirements [40 CFR 60, Appendix B and Appendix F, 40 CFR 60.113b(c), 40 CFR 63.1258(b), 40 CFR 63.693(f), 40 CFR 63.2505, 40 CFR 63.8, 326 IAC 2-1.1-11, 326 IAC 2-7-24, 326 IAC 3-5]

(a) CO, NOx, and SO_2 CEMS Operation Requirements – The following requirements shall apply when the RTO is burning waste fume streams:

(1) The Permittee shall install and operate the CO, NOx, and SO_2 CEMS in accordance with the quality assurance/quality control (QA/QC) criteria set forth in 40 CFR 60, Appendix B, and 40 CFR 60, Appendix F, Procedure 1.

(2) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period.

(3) The Startup, Shutdown, and Malfunction (SSM) Plan required by Condition D.14. 3 (b) shall include procedures for monitoring and recording the following information during times of CO, SO_2 or NOx CEMS malfunction:

(A) When the SO_2 CEMS malfunctions, the Permittee shall monitor and record the scrubber liquid recirculation flow rate and caustic flow rate as required by Condition D.14.6(b)(1)(A) and (B), respectively, and the scrubber liquid pH as required by Condition D.14.6 (b)(1)(C).

(B) When CO CEMS malfunctions, the Permittee shall monitor and record the RTO combustion chamber temperature, and exhaust airflow rate from the RTO as required by D.14.6(a)(1) and (3), respectively.

(C) When the NOx CEMS malfunctions, the Permittee shall monitor and record the combustion chamber temperature and exhaust airflow rate from the RTO as required by D.14.7 (a) (1) and (3), and assess NOx emissions, using process knowledge, to determine whether the quantity of nitrogen fed into the RTOs during that time could have exceeded the worst case 24-hour daily average nitrogen feed rate of 1, 085 pounds per hour that formed the basis of the NOx BACT limit.

(b) TOC CEMS Operation Requirements –The following requirements shall apply only when burning waste fume streams and represent the streamlined requirements of the Pharmaceutical MACT standards [40 CFR 63.1258(b)], Offsite Waste MACT standards [40 CFR 63.693(f)], NESHAP General Provisions monitoring requirements [40 CFR 63.8(c)], NSPS Volatile Organic Liquid Storage Vessel requirements [40 CFR 60.113b(c)], MON standards [40 CFR 2505], PSD BACT requirements for VOCs [326 IAC 2-1.1-11], and emission monitoring requirements for MACT and PSD sources [326 IAC 3-5-1(b) and (d)]:

(1) The Permittee shall install and operate the CEMS in accordance with the QA/QC criteria set forth in 40 CFR 60, Appendix B, 40 CFR 63.1258(b)(1)(x), and 40 CFR 63.8.

(2) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period.

(c) HCl CEMS Operation Requirements – The following requirements shall apply only when burning waste fume streams and represent streamlined requirements for the Pharmaceutical MACT standards for hydrogen halides and halogens [40 CFR 63.1258(b)], NESHAP General Provisions monitoring requirements [40 CFR 63.8(c)], and PSD BACT requirements for fluorides [326 IAC 2-1.1-11]:

(1) The Permittee shall install and operate the HCl CEMS in accordance with the performance and QA/QC criteria established in the *Updated Alternative Monitoring Plan for Hydrogen Chloride Continuous Emission Monitoring Systems for the Regenerative Thermal Oxidizers* ("AMP") submitted to EPA OAQPS on August 15, 2003, and all subsequent revisions to the AMP, as allowed by 40 CFR 63.1258(b) and 40 CFR 63.8.

(2) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period.

(d) CEMS Standard Operating Procedures (SOP) - The Permittee shall prepare and implement an SOP that provides step-by-step procedures and operations in accordance with 326 IAC 3-5-4(a) (9) – Preventive maintenance procedures and corrective maintenance procedures that include those procedures taken to ensure continuous operation and to minimize malfunctions.

D.14.6 Performance Testing Requirements [40 CFR 60.113b(c), 40 CFR 63.7, 40 CFR 63.1257(b), (c), and (d) and 63.1258(b)(3), 40 CFR 63.693(f), 40 CFR 63.2450(g), 326 IAC 3-6-3(c), 326 IAC 2-7-24, and 326 IAC 2-1.1-11]

(a) Initial Comprehensive Performance Test Requirements:

(1) VOC/VOHAP – When applying the control efficiency standard, the following streamlined requirements shall apply only when burning waste fume streams to satisfy the Pharmaceutical MACT standards [40 CFR 63.1257(b), (c), and (d) and 63.1258(b)], Offsite Waste MACT standards [40 CFR 63.693(f)], Volatile Organic Liquid Storage Vessel requirements [40 CFR 60.113b(c)], MON standards [63.2450(g)], PSD BACT requirements [326 IAC 2-1.1-11], and emission testing requirements for MACT sources [326 IAC 3-6-3(c)]:

(A) Prior to applying the control efficiency emission standard, the Permittee shall conduct an initial performance test in accordance with the methods set forth in 40 CFR 63.1257.

(B) The Permittee shall submit a notification of the performance test and a site-specific test plan at least 60 days in advance of the intended performance test date.

(C) The operating parameters defined in Condition D.14.1 (a)(4)(B) shall be monitored during the performance test to establish the 24-hour daily average parametric limits, according to the requirements of 40 CFR 63.1258(b)(3).

(D) The Permittee shall submit the performance test reports, and upon request, the CMS performance evaluation, within 45 days following the test. The Permittee is allowed an extension if a reasonable explanation is provided within 40 days following the test.

(2) Hydrogen Halide/Halogen – When applying the control efficiency standard, the following requirements shall apply only when burning waste fume streams to satisfy the Pharmaceutical MACT standards [40 CFR 63.1258(b)] and the PSD BACT requirements for fluorides [326 IAC 2-1.1-11]:

(A) Prior to applying the control efficiency emission standard, the Permittee shall conduct an initial performance test in accordance with the methods set forth in 40 CFR 63.1257.

(B) The Permittee shall submit a notification of the performance test and a site-specific test plan at least 60 days in advance of the intended performance test date.

(C) The operating parameters defined in Condition D.14.1 (a)(5)(B) shall be monitored during the performance test to establish the 24-hour daily average parametric limits, according to the requirements of 40 CFR 63.1258(b)(3).

(D) The Permittee shall submit the performance test reports, and upon request, the CMS performance evaluation, within 45 days following the test. The Permittee is allowed an extension of 15 days if a reasonable explanation is provided within 40 days following the test.

(b) Subsequent Comprehensive Performance Test Requirements:

If the Permittee is complying with the control efficiency emission standards for VOC/VOHAP and Hydrogen Halide/Halogens, the performance tests shall be repeated at least once every fifth year from the date of the most recent valid compliance demonstration.

D.14.7 Parametric Continuous Monitoring System (CMS) Requirements [40 CFR 63.8(c), 40 CFR 60.113b(c), 40 CFR 63.1257(b), 63.1258(a) and (b), and 63.1260(e), 40 CFR 63.693(b), 40 CFR 63.2450(k), 326 IAC 2-1.1-11, 326 IAC 2-7-24, and 326 IAC 3-5-5(d)]

(a) VOC/VOHAP CMS Operation Requirements - The following streamlined requirements shall apply only when burning waste fume streams to satisfy the Pharmaceutical MACT standards [40 CFR 63.1258(a) and (b)], Offsite Waste MACT standards [40 CFR 63.693(b)], Volatile Organic Liquid Storage Vessel requirements [40 CFR 60.113b(c)], MON requirements [40 CFR 63.2450(k)], PSD BACT requirements [326 IAC 2-1.1-11], and continuous monitoring requirements for flow rate [326 IAC 3-5-5(d)]:

(1) RTO Combustion Chamber Temperature – The Permittee shall install and operate the RTO combustion chamber temperature CMS in accordance with 40

CFR 63.8(c).

(2) Reserved.

(3) Flow Rate Monitor – When applying the VOC/VOHAP concentration emission standard, the Permittee shall install and operate airflow rate CMS at the stack exhaust in accordance with 326 IAC 3-5-5(d).

(4) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period.

(b) Hydrogen Halide/Halogen and Fluorides CMS Requirements – When applying the control efficiency standard, the following requirements shall apply only when burning waste fume streams. The MON hydrogen halide/halogen CMS requirements are included as an Alternative Operating Scenario in Condition D.14.12(a) of this permit and are excluded from the standards in this condition.

(1) The Permittee shall install and operate the following CMSs in accordance with 40 CFR 63.8(c):

(A) Scrubber liquid pH monitor;

(B) Scrubber liquid recirculation flow rate monitor; and

(C) Scrubber caustic flow rate monitor.

(2) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period.

(c) CMS Standard Operating Procedure (SOP) – The Permittee shall prepare and implement a SOP for the CMS units in accordance with 40 CFR 63.8(d).

D.14.8 Excursions [40 CFR 63.1258(b)(6), 40 CFR 63.695(e)(4), 40 CFR 63.2505(b)]

(a) Pursuant to the Pharmaceutical MACT standards [40 CFR 63.1258(b)(7)], MON [40 CFR 63.2505(b)] and the Offsite Waste MACT [40 CFR 63.695(e)(4)], excursions are defined as follows and apply to the CEMS and CMS required by Conditions D.14.4 (b) and (c), and D.14.6, respectively:

(1) When the period of control device operation (i.e., receiving waste fume streams) is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours.

(2) When the period of control device operation (i.e., receiving waste fume streams) is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.

(b) A valid hour requires at least one data point for each 15-minute period in the operating hour.

D.14.9 Minimum Data Requirements – SO_2, CO, and NOx Compliance [326 IAC 2-1.1-11]

The following defines when CEMS data must be supplemented with data required by conditions D.14. 5 (a)(3), D.14.10 (a)(1)(L), and D.14.10 (b)(2):

(a) When the period of RTO operation (i.e., receiving waste streams) is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours, or

(b) When the period of RTO operation (i.e., receiving waste streams) is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.

(c) Monitoring data are insufficient to constitute a valid hour of data if measured values are unavailable for any of the required 15-minute periods within the hour.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.14.10 Record Keeping and Reporting Requirements

(a) Record Keeping Requirements

The Permittee shall maintain the following records:

(1) Control Device (RTO) Records – The following streamlined record keeping requirements satisfy the Pharmaceutical MACT requirements [40 CFR 63.1259], the Offsite Waste MACT standards [40 CFR 63.696], Volatile Organic Liquid Storage Vessel requirements [40 CFR 60.115b], MON requirements [40 CFR 63.2525], HON requirements [40 CFR 63.152], PSD BACT requirements [326 IAC 2-1.1-11 and 326 IAC 2-7-5(3)], and the continuous emission monitoring and performance testing requirements [326 IAC 3-5 and 3-6]:

(A) Log of the operating scenario (i.e., concentration standard or control efficiency standard) applied to satisfy the VOC/VOHAP and hydrogen halide and halogen emission standards required by Conditions D.14.1 (a)(4) and D.14.1 (a)(5) in an On-Site Implementation Log (OSIL);

(B) Description of worst-case operating conditions, if complying with control efficiency standard;

(C) Results of control device performance tests and CMS performance evaluations, if complying with control efficiency standard;

(D) Records of all required CMS and CEMS data;

(E) Records of each CMS and CEMS calibration checks;

(F) Maintenance records for each control device, CMS, and CEMS;

(G) Record of the current standard operating procedure (SOP) for the RTO CEMS and CMS units.

(H) For days when condition D.14.8 requires that CEMS data must be supplemented, the documentation of the information required by Condition D.14.4 (a)(3).

(2) Closed Vent System (RTO CVS) Records – The following streamlined record keeping requirements satisfy the Pharmaceutical MACT requirements [40 CFR 63.1259], the Offsite Waste MACT standards [40 CFR 63.696], Volatile Organic Liquid Storage Vessel requirements [40 CFR 60.115b], MON requirements [40 CFR 63.2525], HON requirements [40 CFR 63.152], PSD BACT requirements [326 IAC 2-1.1-11 and 326 IAC 2-7-5(3)], and the continuous emission monitoring and performance testing requirements [326 IAC 3-5 and 3-6]:

(A) Hourly records of bypass flow indicator operating status and the time and duration of all diversions detected by the bypass flow indicator, if complying via this method;

(B) Monthly visual inspection records of bypass line valves and the occurrence of all periods the valve position has changed, if complying via this method;

(C) Record each CVS component that is unsafe to inspect, and a plan for inspecting the component as frequently as practicable during safe-to-inspect times;

(D) Record each CVS component that is difficult to inspect and a written plan for inspecting the component at least once every five years;

(E) Record the following information if no leaks are detected during applicable Method 21 inspections and CVS annual visual inspections:

(i) Date each inspection was performed; and

(ii) Statement for each inspection that no leaks were detected.

(F) For each part of the CVS not operated under negative pressure, record the following information for all leaks detected during the initial Method 21 inspection:

(i) Identification of leaking equipment;

(ii) Instrument ID and operator name or initials;

(iii) Date the leak was detected and date of first attempt to repair leak;

(iv) Maximum instrument reading after leak from initial Method 21 is successfully repaired or declared non-repairable; and

(v) Record of reason for any delay of repair, name of person responsible for decision, expected date of repair, dates of shutdowns when repair is made and date of successful repair of leak.

(G) Record the following information for all leaks detected from the CVS annual visual inspection:

(i) Identification of leaking equipment;

(ii) Date leak was detected and first attempt to repair leak; and

(iii) Record of reason for any delay of repair, name of person responsible for decision, expected date of repair, dates of shutdowns when repair is made and date of successful repair of leak.

(3) Volatile Organic Liquid Storage Vessel Standards, Offsite Waste MACT, MON, and PSD BACT SSM Records – The Permittee shall maintain the following records:

(A) Current and superseded versions of SSM Plan.

(B) Occurrence/duration records of each process, control device malfunction, CMS malfunction, and CEMS malfunction.

(C) Information to demonstrate conformance with each SSM is consistent with the procedures in the SSM Plan.

(D) Records of actions taken during each SSM when different from SSM Plan.

(4) Pharmaceuticals MACT Malfunction Records - Pursuant to 40 CFR 63.1259(a)(3), the Permittee shall maintain records of the occurrence and duration of each malfunction of operation (i.e., process equipment), air pollution control equipment, or monitoring equipment. The Permittee shall maintain records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.1250(g)(3), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(b) Quarterly Periodic Reports

(1) The following streamlined reporting requirements satisfy the Pharmaceutical MACT [40 CFR 63.1260(g)] Offsite Waste MACT standards [40 CFR 63.697], Volatile Organic Liquid Storage Vessel [40 CFR 60.115b], MON requirements [40 CFR 63.2520], HON requirements [40 CFR 63.151, 63.152], PSD BACT [326 IAC 2-2-3], and the continuous emission monitoring [326 IAC 3-5] requirements:

(A) Condition C.18 describes General Reporting Requirements;

(B) If total duration of excess emissions, parameter exceedances, or excursions is 1% or greater of total operating time OR total CMS downtime is greater than 5% for reporting period, include:

(i) 15-minute data and daily averages for all operating days out of range;

(ii) duration of excursions; and

(iii) operating logs and scenarios for all operating days out of range;

(C) Summary reports of excess emissions, parameter exceedances, percentage of excursions and monitor downtime including information specified in 63.10(c)(5)-(c)(13);

(D) Report, when applicable, no excess emissions, no exceedances, no excursions, and no CMS have been inoperative, out of control, repaired or adjusted;

(E) CVS bypass lines with flow indicator: report all periods when vent stream is diverted from control device through bypass line;

(F) CVS bypass lines without flow indicator, report periods which seal mechanism is broken, position has changed or key to unlock bypass line valve was checked out;

(G) Report each new operating scenario that has been operated since last report; and

(H) Offsite Waste MACT and PSD BACT SSM summary reports for the RTO control system, including associated CEMS and CMS equipment and processes subject to the Offsite Waste MACT and PSD BACT requirements.

(I) Pharmaceutical MACT Malfunction summary including the number, duration, and a brief description of each type of malfunction which occurred during the reporting period which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by the Permittee during a malfunction to minimize emissions in accordance with 40 CFR 63.1250(g)(3).

(2) In addition to the requirements described in D.14.10(b)(1) of this condition, the Permittee shall report the following information for the $SO_{2,}$ CO, and NOx CEMS to satisfy the PSD BACT requirements [326 IAC 2-1.1-11]:

(A) A list of days when condition D.14.8 requires that CEMS data must be supplemented:

(B) A detailed report for each day when condition D.14.8 requires that CEMS data must be supplemented that provides:

(i) the information required by Condition D.14.4 (a)(3), and

(ii) an analysis of whether that information indicates continuous compliance with the limits established in Condition D.14.1 and if the NOx CEMS malfunctions for greater than six continuous hours, an assessment of NOx emissions, using process knowledge, whether the quantity of nitrogen fed into the RTO during that time could have exceeded the worst case 24-hour daily average nitrogen feed rate of 1,085 pounds per hour that formed the basis of the NOx BACT limit.

(c) Immediate Reporting Requirements

(1) Offsite Waste MACT [40 CFR 63.697(b)(3), 63.10(d)(5)(ii)] and PSD BACT [326 IAC 2-2-3] Requirements

The SSM immediate reporting requirements in the Offsite Waste MACT standards [40 CFR 63.697(b)(3)] for SSM-Plans shall be used to satisfy the immediate reporting requirements under the, Offsite Waste MACT standards, and PSD BACT requirements [326 IAC 2-2-3].

(A) The Permittee shall report all actions taken during an SSM event involving a process venting to the RTO or the RTO system that results in an exceedance of a relevant emission standard when those actions are inconsistent with the procedures specified in the SSM Plan. The immediate report shall be submitted to the agency via a telephone call or facsimile within 2 working days after commencing actions inconsistent with the plan.

(B) Within 7 working days after the end of an SSM event that results in an exceedance of a relevant emission standard when those actions taken by the Permittee are inconsistent with the procedures specified in the SSM Plan, the Permittee shall submit a letter containing the following information:

(i) Name, title and signature of responsible official certifying accuracy;

(ii) Explanation of the circumstances of the event;

(iii) Reason for not following the SSM Plan;

(iv) Report any excess emissions and/or parameter monitoring exceedances are believed to have occurred; and

(v) Action taken to minimize emissions.

(2) Pharmaceutical MACT Requirements [40 CFR 63.1250(g)]

If the Permittee wishes to assert an affirmative defense for a Pharmaceuticals MACT malfunction resulting in an exceedance of an applicable emission limit(s), the Permittee shall:

(A) Notify the IDEM by telephone or facsimile (FAX) transmission as soon as possible, but no later than 2 business days after the initial occurrence of the malfunction resulting in an exceedance; and

(B) Submit a written report to the IDEM within 45 days of the initial occurrence of the exceedance, with all necessary supporting documentation described in D.14.3(b). The Permittee may seek an extension of this deadline for up to 30 additional days by submitting a written request to the IDEM before the expiration of the 45 day period. Until a request for an extension has been approved by the IDEM, the Permittee is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.

(d) Control Device Performance Test Report

If complying with the control efficiency standard, as of January 1, 2012, and within 60 days after the date of completing each performance test, the Permittee must submit performance test data, except opacity data, electronically to EPA's Central Data Exchange by using the ERT (see http://www.epa.gov/ttn/chief/ert/ert tool.html/) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.14.11 Modifications and Construction: Advance Approval of Permit Conditions

(a) The Permittee may modify any existing emission units listed in this section of the permit without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the modified emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

(b) The Permittee may construct and install new emission units comparable in function to the emission units listed in this D section without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the new emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

Alternative Operating Scenarios [326 IAC 2-7-20(d)]

D.14.12 Alternative Operating Scenarios

(a) MON Hydrogen Halide and Halogen Standard –- Whenever an Alternative Operating Scenario in this permit requires compliance with the MON hydrogen halide and halogen standard as required by 40 CFR 63. 2455, 63.2460, 63.2465, 63.2470, 63.2475, 63.2485, 63.2505, the Permittee shall meet one of the following hydrogen halide and halogen emission standards. The standards in D.14.12(a)(1) and (2) satisfy the PSD BACT requirements for fluorides [326 IAC 2-2-3].

(1) Concentration Emission Standard via hydrogen halide and halogen CEMS:

(A) Caustic scrubbing shall be used to achieve no more than 20 ppmv hydrogen halide and halogen emissions based on a 24-hour daily average; and

(B) The RTO combustion chamber temperature shall not be less than 1500°F over a 24-hour daily average; and

(C) The RTO combustion chamber residence time shall not be less than 0.75 seconds over a 24-hour daily average, which is equivalent to a maximum 24-hour daily average stack exhaust air flow rate of 3340 standard cubic feet per second; and

(D) The CEMS shall meet the requirements in 40 CFR 63.1258(b)(5) except as provided in 40 CFR 63.2505(b).

(2) Control Efficiency Standard:

If complying with a control efficiency standard, the Permittee shall meet one of the following standards:

(A) Caustic scrubbing shall be used to achieve at least 99% removal of hydrogen halide and halogen emissions and (D) of this permit condition; or

(B) Caustic scrubbing shall be used to achieve no more than 0.45 kilograms hydrogen halide and halogen emissions per hour and (D) of this permit condition; or

(C) Caustic scrubbing shall be used to achieve no more than 20 ppmv hydrogen halide and halogen emissions and (D) of this permit condition;

(D) Establish a 24-hour average for the following parameters as determined from a compliant stack test in accordance with 40 CFR 63.994(c)(1), 63.997 and 63.998(a)(2)(ii)(D)(3):

(i) Minimum scrubber effluent pH;

(iii) Minimum scrubber liquid flow; and

(iii) Maximum inlet gas flow.

The Permittee shall conduct a performance test for hydrogen halides and halogens in accordance with the reporting requirements of 40 CFR 63.2520, 63.7 and 63.10 before the control efficiency monitoring approach is used to assess compliance with this control efficiency standard.

(b) HON Volatile Organic Hazardous Air Pollutant (VOHAP) Standard – Whenever an Alternative Operating Scenario in this permit requires compliance with the HON VOHAP standard as required by 40 CFR 63.113(a) and 63.126(b), the Permittee shall meet one of the streamlined VOHAP emission standards in D.14.12(b)(1), (2), or (3) below, as well as the closed vent system and testing requirements in D.14.12(b)(4) and D.14.12(b)(5), respectively.

(1) Reduce emissions to ≤ 20 ppmv TOC dry corrected to 3% oxygen and (3) of this permit condition; or

(2) Reduce total organic HAP by ≥ 98% and (3) of this permit condition;

(3) A daily average RTO combustion chamber temperature shall be established from a compliant stack test. The Permittee shall conduct a performance test for TOC/VOHAP before the control efficiency monitoring approach is used to assess compliance with this control efficiency standard.

(4) The Permittee shall follow the closed vent system (CVS) inspection standards identified in D.14.1(b), which fulfill the CVS requirements of 40 CFR 63,148. Initial and annual CVS inspections for solvent storage tanks must be completed during filling of the vessels in accordance with 40 CFR 63.120(d)(6).

(5) The Permittee shall follow the performance testing requirements in 40 CFR 63.7 and 63.103(b) and may use the combined stream provisions in 40 CFR 63.112(e)(3)(ii) when applicable.

(c) HON Hydrogen Halide and Halogen Standard –- Whenever an Alternative Operating Scenario in this permit requires compliance with the HON hydrogen halide and halogen standard as required 40 CFR 63.113(c) and 63.126(d), the Permittee shall meet one of the following hydrogen halide and halogen emission standards, as well as the closed vent system requirements in D.14.12(b)(4). The following standards also satisfy the PSD BACT requirements for fluorides [326 IAC 2-2-3].

(1) Caustic scrubbing shall be used to achieve at least 95% removal of hydrogen halide and halogen emissions and (3) of this permit condition; or

(2) Caustic scrubbing shall be used to achieve no more than 0.45 kilograms hydrogen halide and halogen emissions per hour and (3) of this permit condition;

(3) Establish a 24-hour average for the following parameters as determined from a compliant stack test:

(i) Minimum scrubber pH;

(iii) Minimum scrubber liquid flow; and

(iv) Maximum inlet gas flow.

(d) The Permittee shall keep a log of the scenario under which the BCM production is operating according to 326 IAC 2-7-5(9)(A). A summary of these records shall be included in the annual compliance certification in accordance with 326 IAC 2-7-5(9)(C).

SECTION D.15 BCM CONTROL SYSTEMS – T79 FUME INCINERATOR SYSTEM OPERATIONS CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14)]:

(a) The following emissions units are subject to applicable requirements described in this D section:

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	Control Device
T79-INC309	Fume Incinerator	T79-INC309	7.6 MMBtu/hr	Scrubber (313)
T79-INC310	Fume Incinerator	T79-INC310	7.6 MMBtu/hr	Scrubber (314)

(b) The following emission units are not subject to applicable requirements described in this D section:

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	Control Device
T79-COL304	Air Stripper Column	T79	1,500 cfm	T79
T79-COL305	Air Stripper Column	T79	1,500 cfm	T79
T79-TK320	Condensate Collection Tank	T79-321 Fume Stream	200 gal	T79
T79-TK315	Caustic Supply Tank	Atmosphere	750 gal	N/A

The T79 control system consists of two fume incinerators, identified as 309 and 310, each equipped with caustic scrubbing systems, and each exhausting to individual stacks.

The closed vent system (CVS) associated with the T79 control system begins at the production building process, storage, and waste tank vent lines and ends at the entrance of the T79 control system. The positive pressure portions of the CVS are after the steam jet prior to the T79 thermal oxidizer. In addition, the following fume streams have positive pressure portions as noted:

324 Fume Stream: The T140 tank system is positive up to the flow valve for the building, and the Secondary Tank Farm is positive up to the common flow valve.
325 Fume Stream: Waste tank vent lines prior to each tank's conservation vent.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.15.0 Requirement to Control Emissions [40 CFR Part 60 Subpart Kb, 40 CFR Part 63 Subparts GGG, DD, FFFF, F, G, 326 IAC 2-2-3, and 326 IAC 8-5-3]

Except for equipment excluded from emission control requirements and except as otherwise provided by statute or rule, or in this permit, the fumes from all emission units which reference this section shall be continuously routed to the T79 control system while emission units vented to the control equipment are in operation. Except as otherwise provided by statute or rule, or in this permit, the T79 control system shall be operated at all times that the emission units vented to the control equipment are in operation. If the emission standard can be achieved during a T79 control system bypass event, regardless of the cause of the event, then routing emissions to the T79 control system is not required.

D.15.1 T79 Control Device and Closed Vent System Standards [40 CFR 63.1253(b), (c), and (d), 63.1254(a) and (c), 63.1256(b), (e), and (h), 63.1258(b), 40 CFR 63.685(c) and (d), 63.689(b), 63.690(b), 63.693(f), 40 CFR 63.2455, 63.2460, 63.2470, 63.2475, 63.2485, 40 CFR 63.148, 40 CFR 60.112b(a) and 60.113b(c), 326 IAC 2-2-3, and 326 IAC 8-5-3(b)]

(a) T79 Control Device Standards – The T79 control device standards shall apply at all times the unit is burning waste fume streams, except as provided in Condition D.15.2(a):

(1) VOC/VOHAP Emission Standards – In order to satisfy the Pharmaceutical MACT requirements [40 CFR 63.1253(b), (c), and (d), 63.1254(a) and (c), and 63.1256(b), (e) and (h), and 63.1258(b)], the Offsite Waste and Recovery Operations MACT requirements [40 CFR 63.685(c) and (d), 63.689(b), 63.690(b), and 63.693(f)], MON requirements [40 CFR 63.2450(c)(2), 63.2455, 63.2460, 63.2470, 63.2475, 63.2485, 63.2505], HON requirements [40 CFR 63.112(e)(3)(ii), 63.113(a), 63.120(d)(1)(i), 63.126(b)(1), 63.139(c)], the PSD BACT requirements [326 IAC 2-2-3], the Synthetic Pharmaceutical RACT requirements [326 IAC 8-5-3(b)], and the New Source Performance Standards for Volatile Organic Liquid Storage Vessel requirements [40 CFR 60.112b(a) and 60.113b(c)], the Permittee shall meet the following streamlined VOC/VOHAP emission standards:

(A) The T79 control system shall reduce VOC/VOHAP emissions by a control efficiency of 98% or more;

(B) The 24-hour daily average T79 combustion chamber shall not be less than the value established from a compliant stack test.

(2) Hydrogen halide and halogen Emission Standards – In order to satisfy the Pharmaceutical MACT requirements [40 CFR 63.1253(b), (c), and (d), 63.1254(a) and (c), 63.1256(b), (e) and (h), and 63.1258(b)] MON requirements [40 CFR 63. 2455, 63.2460, 63.2465, 63.2470, 63.2475, 63.2485], HON requirements [40 CFR 63.112(e)(3)(ii), 63.113(c) and 63.126(d)], and PSD BACT requirements for fluorides [326 IAC 2-2-3], the Permittee shall meet the following streamlined hydrogen halide and halogen (including hydrogen fluoride) emission standards:

(A) The T79 control system shall reduce hydrogen halide and halogen emissions by a control efficiency of 99% or more; and

(B) The T79 caustic scrubber system shall maintain the following 24-hour daily average parametric conditions established during a compliant stack test:

(i) Minimum scrubber effluent pH;

(ii) Minimum scrubber liquid flow rate;

(iii) Maximum scrubber caustic liquid flow rate; and

(iv) Maximum inlet gas flow rate.

(b) T79 Closed Vent System Inspection Standards – The following inspection standards shall apply to the T79 CVS, except as provided in Condition D.15.2 (b):

(1) The Permittee shall comply with the following CVS inspection requirements to satisfy the Pharmaceutical MACT requirements [40 CFR 63.1256(b)(3) and (e)(1) and 63.1258(h)], the Offsite Waste MACT requirements [40 CFR 63.685(g),

63.689(b), 63.690(b), 63.693(b) and (c), and 63.695(c)], MON requirements [40 CFR 63.983], HON requirements [40 CFR 63.148, 63.120(d)(6)], and the PSD BACT requirements [326 IAC 2-2-3]:

(A) Conduct an initial one-time Method 21 inspection on new portions of the T79 CVS not operated under negative pressure and not subject to LDAR within 150 days after startup. Portions of the T79 CVS that are operated under negative pressure shall be equipped with a pressure gauge or other pressure measurement/detection. The data output must be viewable from a readily accessible location to verify that negative pressure is being maintained when waste fume streams are going to the control system.

(B) Perform annual inspections of the T79 CVS for visible cracks, holes or gaps, loose connections, broken or missing caps, and visible, audible or olfactory indication of leaks.

(C) Initiate repair of any leak detected on the T79 CVS no later than 5 calendar days after identification, and complete the repair within 15 days after identification, unless:

(i) The repair is technically infeasible without a shutdown of an operation or process; or

(ii) It is determined that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair.

Repairs delayed due to either of the causes described in (A) or (B) shall be completed by the end of the next shutdown.

(2) The Permittee shall monitor each bypass line on the T79 CVS to satisfy the Pharmaceutical MACT requirements [40 CFR 63.1252(b), 63.1253(b) and (c), and 63.1258(b)], the Offsite Waste MACT requirements [40 CFR 63.685(g), 63.689(b), 63.690(b), and 63.693(c)], MON requirements [40 CFR 63.2450(e), 63.982(c), 63.983(a), 63.998(d)], HON requirements [40 CFR 63.114(d), 63.118(a), 63.148(f)] and the PSD BACT requirements [326 IAC 2-2-3] using one of the following methods:

(A) Install and monitor the position of the T79 CVS bypass valve at least once every 15 minutes, where the closed position means there is no bypass flow; or

(B) Secure the bypass line valve in the closed position with a car seal or lock and key type configuration. Monthly visual inspections of seal or locking device shall be performed to ensure the seal is not broken or the valve is in the closed position and the vent stream is not diverted through the bypass line.

D.15.2 Exceptions to T79 Control System Standards [40 CFR 60.9(c), 40 CFR 63.1250(g), and 63.1252(a), 40 CFR 63.681, 63.685(g), 63.693(b), 40 CFR 63.2450(a) and (p) and 326 IAC 2-2-3]

(a) Exceptions to T79 Control Device Operational Standards – The following streamlined standards satisfy the NSPS for Volatile Organic Liquid Storage [40 CFR 60.9(c)], Pharmaceutical MACT standards [40 CFR 63.1250(g) and 63.1252(a)], Offsite Waste MACT standards [40 CFR 63.681, 63.685(g) and 63.693(b)], MON standards [40 CFR 63.2450(a) and (p)], HON standards [40 CFR 63.114(d), 63.118(a), 63.148(f)] and PSD

BACT requirements [326 IAC 2-2-3]:

(1) The Permittee may open a safety device and bypass the T79 system at any time conditions require it to do so to avoid unsafe conditions.

(2) The provisions of Conditions D.15.1 (a) shall not apply during periods of startup, shutdown or malfunction that preclude the Permittee from complying with Condition D.15.1(a). This exemption does not apply to requirements under the Pharmaceutical MACT standards.

(b) Exceptions to T79 CVS Inspection Standards – The following streamlined standards satisfy the Pharmaceutical MACT standards [40 CFR 63.1258(h)(6) and (7)], MON standards [40 CFR 63.2485, 63.148(g) and (h)], HON standards [40 CFR 63.148(g) and (h)] and PSD BACT requirements [326 IAC 2-2-3]:

(1) The Permittee is not required to inspect if unsafe or difficult to inspect. The Permittee must have a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times (for unsafe inspections) or at least once every 5 years (for difficult inspections).

D.15.3 Startup, Shutdown, and Malfunction Requirements for T79 Control System [40 CFR 60.8(c), 40 CFR 63.1250(g), 40 CFR 63.697(b)(3), 40 CFR 63.2540 and MON Table 12, 326 IAC 2-2-3]

(a) At all times, the Permittee must operate and maintain processes and associated air pollution control equipment and monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required have been achieved.

(b) Volatile Organic Liquid Storage Vessel Standards [40 CFR 60.7, 40 CFR 60.8(c)], Offsite Waste MACT [40 CFR 63.697(b)(3)], MON [40 CFR 63.2540 and Table 12] and PSD BACT [326 IAC 2-2-3] SSM Requirements

(1) The Offsite Waste MACT and MON requirements for Startup, Shutdown, and Malfunction (SSM) [40 CFR 63.697(b)(3)] are applicable to SSM events involving emission units and processes subject to the Volatile Organic Liquid Storage Vessel standards [40 CFR 60.7, 40 CFR 60.8(c)], Offsite Waste MACT standards, MON standards and/or PSD BACT requirements [326 IAC 2-2-3].

(2) Pursuant to 40 CFR 63.697(b)(3) and 63.2540, the Permittee shall develop an SSM Plan to ensure that processes and air pollution control devices subject to the Offsite Waste MACT, MON and PSD BACT requirements are operated and maintained in a manner to prevent or minimize excess emissions to the extent practical [40 CFR 63.6(e)]. The SSM Plan shall contain the following information:

(A) Detailed procedures for operating and maintaining the processes and T79 system, including associated CEMS and CMS equipment, during periods of startup, shutdown, and malfunction; and

(B) Corrective action program for malfunctioning processes and air pollution control equipment.

(c) Pharmaceutical MACT Requirements [40 CFR 63.1250(g)]

(1) In response to an action to enforce the Pharmaceutical MACT standards, the Permittee may assert an affirmative defense to a claim for civil penalties for exceedances of such standards that are cause by a malfunction by meeting the

notification requirements in Section D.14.10 and proving by a preponderance of evidence the following:

(A) The excess emissions were caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, or a process to operate in a normal and usual manner; and could not have been prevented through careful planning, proper design, or better operation and maintenance practices; and did not stem from any activity or event that could have been foreseen and avoided, or planned for; and were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;

(B) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs;

(C) The frequency, amount, and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions;

(D) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(E) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment, and human health;

(F) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices;

(G) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs;

(H) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions; and

(I) The owner or operator has prepared a written root cause analysis, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using the best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

D.15.4 Reserved

Testing and Monitoring Requirements [326 IAC 2-7-5, 326 IAC 2-7-6]

D.15.5 Performance Testing Requirements [40 CFR 60.113b(c), 40 CFR 63.7, 40 CFR 63.1257(b), (c), and (d) and 63.1258(b)(3), 40 CFR 63.693(f), 326 IAC 3-6-3(c), and 326 IAC 2-1.1-11]

(a) Reserved

(b) Comprehensive Performance Test Requirements:

If at any time the Permittee changes the design, operation and maintenance features of the T79 Fume Incinerator System in a manner that could reasonably be expected to affect its ability to meet the VOC/VOHAP control efficiency, then the Permittee shall conduct a performance test to demonstrate compliance with the VOC/VOHAP control efficiency requirements. If at any time the Permittee changes the design, operation and maintenance features of the T79 Fume Incinerator System in a manner that could reasonably be expected to affect its ability to meet the Hydrogen Halide/Halogens control efficiency, then the Permittee shall conduct a performance test to demonstrate compliance with the Halide/Halogen control efficiency requirements.

D.15.6 Parametric Continuous Monitoring System (CMS) Requirements [40 CFR 63.8(c), 40 CFR 60.113b(c), 40 CFR 63.1257(b), 63.1258(a) and (b), and 63.1260(e), 40 CFR 63.693(b), 40 CFR 63.2450(g), 326 IAC 2-1.1-11, and 326 IAC 3-5-5(d)]

(a) VOC/VOHAP CMS Requirements - The following streamlined requirements apply only when burning waste fume streams to satisfy the Pharmaceutical MACT standards [40 CFR 63.1258(a) and (b)], Offsite Waste MACT standards [40 CFR 63.684(e)(1)], Volatile Organic Liquid Storage Vessel requirements [40 CFR 60.113b(c)], MON standards [40 CFR 63.2450(g), HON standards [40 CFR 63.112(e)(3)(ii), 63.114(a), 63.127(a)] and PSD BACT requirements [326 IAC 2-1.1-11]:

(1) T79 Combustion Chamber Temperature – The Permittee shall install and operate the T79 combustion chamber temperature CMS in accordance with 40 CFR 63.8(c).

(2) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period.

(b) Hydrogen Halide/Halogen and Fluorides CMS Requirements – The following requirements apply only when burning waste fume streams to satisfy the hydrogen halides and halogens Pharmaceutical MACT standards [40 CFR 63.1257(b), 63.1258(b), and 63.1260(e)] MON standards [40 CFR 63.2450(e)(3), 63.994, 63.998], HON standards [40 CFR 63.112(e)(3)(ii), 63.114(a), 63.127(a)] and PSD BACT requirements for fluorides [326 IAC 2-1.1-11]:

(1) The Permittee shall install and operate the following CMSs in accordance with 40 CFR 63.8(c):

(A) Scrubber liquid pH monitor;

(B) Scrubber liquid recirculation flow rate monitor;

(C) Scrubber caustic flow rate monitor; and

(D) Scrubber gas flow rate.

(2) Continuous operation is defined as the collection of at least one measurement for each successive 15-minute period.

(c) CMS Quality Control Program – The Permittee shall prepare and implement a quality control program for the CMS units in accordance with 40 CFR 63.8(d).

D.15.7 Excursions [40 CFR 63.1258(b)(6) and 40 CFR 63.695(e)(4)]

(a) Pursuant to the Pharmaceutical MACT standards [40 CFR 63.1258(b)(7)] and the Offsite Waste MACT [40 CFR 63.695(e)(4)], and to satisfy the monitoring for the BACT requirement [326 IAC 2-1.1-11], excursions are defined as follows and apply to the CEMS and CMS required by Condition D.15.5:

(1) When the period of control device operation (i.e., receiving waste fume streams)

is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours.

(2) When the period of control device operation (i.e., receiving waste fume streams) is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.

(b) A valid hour requires at least one data point for each 15-minute period in the operating hour.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.15.8 Record Keeping and Reporting Requirements

(a) Record Keeping Requirements

The Permittee shall maintain the following records:

(1) Control Device (T79) Records – The Pharmaceutical MACT record keeping requirements [40 CFR 63.1259] shall serve as the streamlined requirement that satisfies the Offsite Waste MACT standards [40 CFR 63.696], Volatile Organic Liquid Storage Vessel requirements [40 CFR 60.115b], MON requirements [40 CFR 63.2525], HON requirements [40 CFR 63.152], PSD BACT requirements [326 IAC 2-1.1-11], and continuous emission monitoring and performance testing requirements [326 IAC 3-5 and 3-6]:

(A) Description of worst-case operating conditions;

(B) Results of control device performance tests and CMS performance evaluations;

(C) Records of all required CMS data;

(D) Records of each CMS calibration checks;

(E) Maintenance records for each control device and CMSs;

(F) Record of the current standard operating procedure (SOP) for the T79 CMS units.

(2) Closed Vent System (T79 CVS) Records – The Pharmaceutical MACT record keeping requirements [40 CFR 63.1259] shall serve as the streamlined requirement that satisfies the Offsite Waste MACT standards [40 CFR 63.696], Volatile Organic Liquid Storage Vessel requirements [40 CFR 60.115b], MON requirements [40 CFR 63.2525], HON requirements [40 CFR 63.152], PSD BACT requirements [326 IAC 2-1.1-11], and continuous emission monitoring and performance testing requirements [326 IAC 3-5 and 3-6]:

(A) Hourly records of bypass flow indicator operating status and the time and duration of all diversions detected by the bypass flow indicator, if complying via this method;

(B) Monthly visual inspection records of bypass line valves and the occurrence of all periods the valve position has changed, if complying via this method;

(C) For each portion of the CVS not operated under negative pressure, record each component that is unsafe to inspect, and a plan for inspecting the component as frequently as practicable during safe-to-inspect times;

(D) For each portion of the CVS not operated under negative pressure, record each component that is difficult to inspect and a written plan for inspecting the component at least once every five years;

(E) For each part of the CVS not operated under negative pressure, record the following information if no leaks are detected during the initial Method 21 inspection or annual visual inspections:

(i) Date each inspection was performed; and

(ii) Statement for each inspection that no leaks were detected.

(F) For each part of the CVS not operated under negative pressure, record the following information for all leaks detected during the initial Method 21 inspection:

(i) Identification of leaking equipment;

(ii) Instrument ID and operator name or initials;

(iii) Date the leak was detected and date of first attempt to repair leak;

(iv) Maximum instrument reading after leak from initial Method 21 is successfully repaired or declared non-repairable; and

(v) Record of reason for any delay of repair, name of person responsible for decision, expected date of repair, dates of shutdowns when repair is made and date of successful repair of leak.

(G) For each part of the CVS not operated under negative pressure, record the following information for all leaks detected from the annual visual inspection:

(i) Identification of leaking equipment;

(ii) Date leak was detected and first attempt to repair leak; and

(iii) Record of reason for any delay of repair, name of person responsible for decision, expected date of repair, dates of shutdowns when repair is made and date of successful repair of leak.

(3) Volatile Organic Liquid Storage Vessel Standards, Offsite Waste MACT, MON, and PSD BACT SSM Records – The Permittee shall maintain the following records:

(A) Current and superseded versions of SSM Plan.

(B) Occurrence/duration records of each process, control device malfunction, CMS malfunction, and CEMS malfunction.

(C) Information to demonstrate conformance with each SSM is consistent with the procedures in the SSM Plan.

(D) Records of actions taken during each SSM when different from SSM Plan.

(4) Pharmaceuticals MACT Malfunction Records - Pursuant to 40 CFR 63.1259(a)(3), the Permittee shall maintain records of the occurrence and duration of each malfunction of operation (i.e., process equipment), air pollution control equipment, or monitoring equipment. The Permittee shall maintain records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.1250(g)(3), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(b) Quarterly Periodic Reporting Requirements

(1) The following Pharmaceutical MACT reporting requirements [40 CFR 63.1260(g)] shall serve as the streamlined reporting requirements that satisfy the Offsite Waste MACT standards [40 CFR 63.697], Volatile Organic Liquid Storage Vessel requirements [40 CFR 60.115b], MON requirements [40 CFR 63.2520], HON requirements [40 CFR 63.151, 63.152], PSD BACT requirements [326 IAC 2-2-3], and continuous emission monitoring requirements [326 IAC 3-5]:

(A) Condition C.18 describes General Reporting Requirements;

(B) If total duration of excess emissions, parameter exceedances, or excursions is 1% or greater of total operating time or total CMS downtime is greater than 5% for reporting period, include:

(i) 15-minute data and daily averages for all operating days out of range;

(ii) duration of excursions; and

(iii) operating logs and scenarios for all operating days out of range;

(C) Summary reports of excess emissions, parameter exceedances, and monitor downtime including information specified in 63.10(c)(5)-(c)(13);

(D) Report, when applicable, no excess emissions, no exceedances, no excursions, and no CMS have been inoperative, out of control, repaired or adjusted;

(E) CVS bypass lines with flow indicator: report all periods when vent stream is diverted from control device through bypass line;

(F) CVS with bypass lines without flow indicator: report periods which seal mechanism is broken, position has changed or key to unlock bypass line valve was checked out;

(G) Report each new operating scenario that has been operated since last report;

(H) Offsite Waste MACT and PSD BACT SSM summary reports for the T79 control system, including associated CEMS and CMS equipment and processes subject to the Offsite Waste MACT and PSD BACT requirements.

(I) Pharmaceutical MACT Malfunction summary including the number, duration, and a brief description of each type of malfunction which occurred during the reporting period which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by the Permittee during a malfunction to minimize emissions in accordance with 40 CFR 63.1250(g)(3).

(c) Immediate Reporting Requirements

(1) Offsite Waste MACT [40 CFR 63.697(b)(3), 63.10(d)(5)(ii)] and PSD BACT [326 IAC 2-2-3] Requirements

The SSM immediate reporting requirements in the Offsite Waste MACT standards [40 CFR 63.697(b)(3)] for Startup, Shutdown and Malfunction (SSM) Plans shall be used to satisfy the immediate reporting requirements under the Offsite Waste MACT standards and PSD BACT requirements [326 IAC 2-2-3].

(A) The Permittee shall report all actions taken during an SSM event involving a process venting to T79 or the T79 system that results in an exceedance of a relevant emission standard when those actions are inconsistent with the procedures specified in the SSM Plan. The immediate report shall be submitted to the agency via a telephone call or facsimile within 2 working days after commencing actions inconsistent with the plan.

(B) Within 7 working days after the end of an SSM event that results in an exceedance of a relevant emission standard when those actions taken by the Permittee are inconsistent with the procedures specified in the SSM Plan, the Permittee shall submit a letter containing the following information:

(i) Name, title and signature of responsible official certifying accuracy;

(ii) Explanation of the circumstances for the event;

(iii) Reason for not following the SSM Plan;

(iv) Report any excess emissions and/or parameter monitoring exceedances are believed to have occurred; and

(v) Actions taken to minimize emissions.

(2) Pharmaceutical MACT Requirements [40 CFR 63.1250(g)]

If the Permittee wishes to assert an affirmative defense for a Pharmaceuticals MACT malfunction resulting in an exceedance of an applicable emission limit(s), the Permittee shall:

(A) Notify the IDEM by telephone or facsimile (FAX) transmission as soon as possible, but no later than 2 business days after the initial occurrence of the malfunction resulting in an exceedance; and

(B) Submit a written report to the IDEM within 45 days of the initial occurrence of the exceedance, with all necessary supporting documentation described in D.15.3(c). The Permittee may seek an extension of this deadline for up to 30 additional days by submitting a written request to the IDEM before the expiration of the 45 day period. Until a request for an extension has been approved by the IDEM, the Permittee is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.

(d) Control Device Performance Test Report

If complying with control efficiency standard, as of January 1, 2012, and within 60 days after the date of completing each performance test, the Permittee must submit performance test data, except opacity data, electronically to EPA's Central Data Exchange by using the ERT (see http://www.epa.gov/ttn/chief/ert/ert tool.html/) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.15.9 Modifications and Construction: Advance Approval of Permit Conditions

(a) The Permittee may modify any existing emission units listed in this section of the permit without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the modified emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

(b) The Permittee may construct and install new emission units comparable in function to the emission units listed in this D section without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the new emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

SECTION D.16 BUILDING T171 RESEARCH AND DEVELOPMENT AND PHARMACEUTICAL MANUFACTURING OPERATIONS CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14)]:

(a) The emission units listed below are insignificant activities as defined in 326 IAC 2-7-1(21), but are subject to applicable requirements described or referred to in this D section.

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	Control Device
Building T171:				
T171-31A985DUCHT4	Charge Tank	Atmosphere	10 gallons	Cryogenic Condenser*
T171-TI0031000MS001	Slurry Mill	Atmosphere	NA	Cryogenic Condenser*
T171-T46109	Slurry Mill	Atmosphere	NA	Cryogenic Condenser*
T171-C9301	Centrifuge	Atmosphere	5 liters	Cryogenic Condenser*
T171-T63150	Plate Filter Press	Atmosphere	150 liters	Cryogenic Condenser*
T171-FLDR-9803	Filter Dryer	Atmosphere	75 liters	Cryogenic Condenser*
T171-FLDR-9804	Filter Dryer	Atmosphere	150 liters	Cryogenic Condenser*
T171-TK5700	Waste/Wastewater Tank	Atmosphere	1,000 gallons	None
T 171-TK9601	Portable Process Tank	Atmosphere	50 gallons	Cryogenic Condenser*
T 171-TK9602	Portable Process Tank	Atmosphere	50 gallons	Cryogenic Condenser*
T171-TK9605	Portable Process Tank	Atmosphere	30 gallons	Cryogenic Condenser*
T171-TK9606	Portable Process Tank	Atmosphere	50 gallons	Cryogenic Condenser*
T171-TK9609	Portable Process Tank	Atmosphere	30 gallons	Cryogenic Condenser*
T171-TK9610	Portable Process Tank	Atmosphere	50 gallons	Cryogenic Condenser*
T171-TK9611	Portable Process Tank	Atmosphere	50 gallons	Cryogenic Condenser*
T171-TK9612	Portable Process Tank	Atmosphere	50 gallons	Cryogenic Condenser*
T171-PG9108	Portable Process Tank	Atmosphere	30 gallons	Cryogenic Condenser*
T171-PG9109	Portable Process Tank	Atmosphere	30 gallons	Cryogenic Condenser*
T171-TK9613	Condensate Collection Tank	Atmosphere	10 gallons	Cryogenic Condenser*
T171-TK9614	Condensate Collection Tank	Atmosphere	10 gallons	Cryogenic Condenser*
T171-TK9615	Condensate Collection Tank	Atmosphere	10 gallons	Cryogenic Condenser*
T171-TK9616	Condensate Collection Tank	Atmosphere	10 gallons	Cryogenic Condenser*
T171-TK9617	Condensate Collection Tank	Atmosphere	20 gallons	Cryogenic Condenser*
T171-TK9622	Charge Tank	Atmosphere	15 gallons	Cryogenic Condenser*

T171-TK9623	Charge Tank	Atmosphere	10 gallons	Cryogenic Condenser*
T171-TK9624	Charge Tank	Atmosphere	10 gallons	Cryogenic Condenser*
T171-TK9625	Charge Tank	Atmosphere	10 gallons	Cryogenic Condenser*
T171-TK9626	Charge Tank	Atmosphere	10 gallons	Cryogenic Condenser*
T171-RVD9801	Rotary Vacuum Dryer	Atmosphere	19 gallons	Cryogenic Condenser*
T171-FLT9901	Single-Plate Filter Press	Atmosphere	22 gallons	Cryogenic Condenser*
T171-FLT9902	Multi-Plate Filter Press	Atmosphere	3 gallons	Cryogenic Condenser*

* Control devices marked with an asterisk are voluntary control units and are not required to demonstrate compliance with any regulations unless specified in a Pharmaceutical MACT operating scenario.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.16.1 Non-Applicability Determination [40 CFR 63, Subpart GGG and 326 IAC 8-5-3]

(a) The emission units listed above are not subject to the requirements of 40 CFR 63, Subpart GGG (Pharmaceutical MACT Standards) when the operations are serving as research and development facilities that are exempt pursuant to 40 CFR 63.1250(d) and 63.1251.

(b) The emission units listed above are not subject to the requirements of 326 IAC 8-5-3 because the potential to emit VOC of any facility is less than 15 pounds per day.

D.16.2 Pharmaceutical MACT Process-Based Annual Mass Limit [40 CFR 63.1254]

When an emission unit listed above is not serving as a research and development facility and is engaged in the manufacture of products for commercial sale in commerce greater than a de minimis manner, the following apply:

(a) The undiluted and uncontrolled process vent streams equal to or greater than 50 ppmv hazardous air pollutants (HAP) from the emission unit that use the process-based annual mass limit shall limit actual process vent emissions to 900 kilograms (kg) per 365-day period to comply with the individual process-based mass limit standards under 40 CFR 63.1254(a)(2)(i); and

(b) The Permittee may switch from compliance with the process-based annual mass limit to another Pharmaceutical MACT process vent compliance method only after at least 1 year of operation using the process-based annual mass limit.

D.16.3 Standards for Pharmaceutical MACT Wastewater Tanks [40 CFR 63,1256]

In accordance with the Pharmaceutical MACT, when T171-TK5700 is functioning as a wastewater tank that receives affected wastewater or residual removed from affected wastewater, the following shall apply:

(a) The tank shall have a fixed-roof design; and

(b) The inspection, record keeping, and reporting standards in Section D.10 of this permit shall be followed, as applicable.

D.16.4 Leak Detection and Repair (LDAR) for Fugitive Emissions [CP157-4148 (Revised by this permit)]

The LDAR standards that apply to components associated with the process operations in Building

T171 are described in Section E.1 of this permit and the waste tank in T171 are described in Section E.2 of this permit.

Testing and Monitoring Requirements [326 IAC 2-7-5(1), 326 IAC 2-7-6(1), 40 CFR 63.1257, and 40 CFR 63.1258]

D.16.5 Pharmaceutical MACT Testing and Monitoring Requirements [40 CFR 63, Subpart GGG and326 IAC 20]

For each process subject to Pharmaceutical MACT standards, the following apply:

(a) Pursuant to 40 CFR 63.1258(c), the Permittee shall demonstrate continuous compliance with the process-based annual mass limits by calculating daily 365 day rolling summations of emissions. The procedures in 40 CFR 63.1257 should be used to determine emissions.

(b) When control devices are used to meet the process-based annual mass limits, the Permittee must monitor control devices and demonstrate compliance pursuant to 40 CFR 63.1258(b), as follows when such control devices are in use:

(1) For control devices that control vent streams totaling less than 1 ton per year HAP emissions, before control, the Permittee shall verify daily or per batch that the control device is operating properly. If the control device is used to control batch process vents alone or in combination with other streams, the verification may be on a per batch basis. This verification shall include, but not be limited to, a daily or per batch demonstration that the unit is working as designed. Measurements taken for this verification are not considered continuous monitoring systems.

(2) For condensers that control vent streams totaling greater than 1 ton per year and less than 10 tons per year HAP emissions, before control:

(A) The Permittee shall establish the maximum condenser outlet temperature or product side temperature as a site-specific operating parameter pursuant to 40 CFR 63.1258(b)(3) and 63.1257(d)(3).

(B) The Permittee shall measure and record the outlet gas temperature at least every 15 minutes during the period in which the condenser is functioning in achieving HAP removal. The outlet gas temperature continuous monitoring system must meet all applicable requirements of 40 CFR 63.8.

(C) The temperature monitoring device must be accurate to within ± 2 percent of the temperature measured in degrees Celsius or ± □ 2.5 degrees Celsius whichever is greater.

(D) The temperature monitoring device must be calibrated annually.

(E) Averaging periods for the site-specific operating parameters shall be established according to 40 CFR 63.1258(b)(2)(i) through (iii).

(F) Reserved.

(G) Reserved.

(3) For scrubbers that control vent streams totaling greater than 1 ton per year and less than 10 tons per year HAP emissions, before control:

(A) The Permittee shall establish a minimum scrubber liquid flow rate or pressure drop as a site-specific operating parameter. If the scrubber uses a caustic solution to remove acid emissions, the Permittee shall establish a minimum pH of the effluent scrubber liquid as a site-specific operating parameter pursuant to 40 CFR 63.1258(b)(3).

(B) The Permittee shall measure and record either the scrubber liquid flow rate or pressure drop every 15 minutes during the period in which the scrubber is functioning in achieving HAP removal. If the scrubber uses a caustic solution to remove acid emissions, the Permittee shall monitor the pH of the effluent scrubber liquid at least once per day. The continuous monitoring system must meet all applicable requirements of 40 CFR 63.8.

(C) The monitoring device(s) used to determine the pressure drop shall be certified by the manufacturer to be accurate to within a gage pressure of ± 10 percent of the maximum pressure drop measured.

(D) The monitoring device(s) used for measurement of scrubber liquid flow rate shall be certified by the manufacturer to be accurate within ± 10 percent of the design scrubber liquid flow rate.

(E) The monitoring device(s) shall be calibrated annually.

(F) Reserved.

(G) Reserved.

(4) In accordance with 63.1257(d)(3)(iii), for process condensers that are either followed by no control device or followed by a control device other than a condenser, the Permittee shall demonstrate for all appropriate operating scenarios that the process condenser is properly operated by either:

(A) Measure the condenser exhaust gas temperature and show it is less than the boiling or bubble point of the substance(s) in the vessel; or

(B) Perform a material balance around the vessel and condenser to show that at least 99 percent of the material vaporized while boiling is condensed.

(c) When a control device is used to comply with Condition D.16.2, the Permittee shall meet the requirements of (1) or (2) below for any bypass lines on the T171 closed-vent system (CVS) that could divert a vent stream away from the control device:

(1) Install, calibrate, maintain, and operate a flow indicator that determines whether vent stream flow is present at least once every 15 minutes. The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere.

(2) Secure the bypass line valve in the closed position with a car seal or lock and key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3) and 326 IAC 2-7-19]

D.16.6 Record Keeping Requirements [40 CFR 63, Subpart GGG and 326 IAC 20]

(a) For each process using the annual mass limit compliance option, the Permittee shall keep daily records of the rolling annual total emissions required in D.16.2.

(b) For each process subject to Pharmaceutical MACT standards, the Permittee shall keep the following records pursuant to 40 CFR 63.1259(b)(5), as appropriate:

  (1) The number of batches per year for each batch process;

  (2) The operating hours per year for continuous processes;

  (3) Standard batch uncontrolled and controlled emissions for each process;

  (4) Actual uncontrolled and controlled emissions for each nonstandard batch;

  (5) A record whether each batch operated was considered a standard batch;

(c) Pursuant to 40 CFR 63.1259(c), for each process subject to Pharmaceutical MACT standards, the Permittee shall keep records of each operating scenario, which demonstrates compliance with 40 CFR 63, Subpart GGG.

(d) For each process subject to Pharmaceutical MACT standards, the Permittee shall keep a schedule or log of each operating scenario updated daily or, at a minimum, each time a different operating scenario is put into operation.

(e) For control devices controlling Pharmaceutical MACT-subject vent streams totaling less than 1 ton per year HAP emissions, before control, the Permittee shall keep records of the daily verifications that each control device is operating properly as required in Condition D.16.5.

(f) For each condenser or scrubber controlling Pharmaceutical MACT-subject vent streams totaling greater than 1 ton per year and less than 10 tons per year HAP emissions, before control, the Permittee shall keep records of condenser outlet gas temperature and scrubber liquid flow rate or pressure drop as applicable and as required in Condition D.16.5.

(g) For each process using continuous monitoring systems to meet Pharmaceutical MACT standards, the Permittee shall maintain continuous monitoring system records specified in 40 CFR 63.10(c)(1) through (14). Pursuant to 40 CFR 63.1259(b)(3), the Permittee shall maintain records documenting the completion of calibration checks and maintenance of continuous monitoring systems.

(h) The Permittee shall keep a description of worst-case operating conditions as required in 40 CFR 63.1257(b)(8), as applicable.

(i) The Permittee shall keep records of all maintenance performed on the air pollution control equipment, as applicable.

(j) For any control devices used to meet Pharmaceutical MACT standards, the Permittee shall keep the following records:

  (1) Hourly records of bypass flow indicator operating status and the time and duration of all diversions detected by the bypass flow indicator, if complying via this method; or

(2) Monthly visual inspection records of bypass line valves and the occurrence of all periods the valve position has changed, if complying via this method.

D.16.7 Reporting Requirements [40 CFR 63, Subpart GGG] [326 IAC 20]

(a) For each process subject to Pharmaceutical MACT standards, the Permittee shall submit the following information with the Quarterly Periodic Report required by Condition C.18:

(1) Exceedance of a limit established in accordance with Condition D.16.5.

(2) If total duration of excess emissions, parameter exceedances, or excursions is 1% or greater of total operating time or total CMS downtime is greater than 5% for reporting period when continuous monitoring is required, include:

(A) 15-minute data and daily averages for all operating days out of range;

(B) duration of excursions; and

(C) operating logs and scenarios for all operating days out of range;

(D) Summary reports of excess emissions, parameter exceedances, and monitor downtime including information specified in 63.10(c)(5)-(c)(13);

(3) Report, when applicable, no excess emissions, no exceedances, no excursions, and no CMS have been inoperative, out of control, repaired or adjusted;

(4) CVS bypass lines with flow indicator: report all periods when vent stream is diverted from control device through bypass line when cryogenic condenser is functioning as a control unit.

(5) CVS bypass lines without flow indicator: report periods which seal mechanism is broken, valve position has changed, or key to unlock bypass line valve was checked out.

(6) Reserved.

(7) Each new operating scenario that has been operated since last report.

(b) The Permittee must submit a report 90 days before the scheduled implementation date of either any change in the activity covered by the Pharmaceuticals MACT Precompliance report or a change in the status of a control device from small to large.

(c) Except as specified in (b) above, whenever a process change is made or there is a change in any of the information submitted in the Pharmaceuticals MACT Notification of Compliance Status Report, the Permittee shall submit the following information with the next Periodic report:

(1) A brief description of the process change;

(2) A description of any modifications to standard procedures or quality assurance procedures;

(3) Revisions to any of the information reported in the original Notification of Compliance Status Report;

(4) Information required by the Notification of Compliance Status Report for changes involving the addition of processes or equipment;

(5) Initial compliance demonstration for process condensers.

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.16.8 Modifications and Construction: Advance Approval of Permit Conditions

The emission units described in this D section are not subject to the advance approval permit conditions.

SECTION D.17 GENERAL WASTEWATER OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14)]:

(a) BCM Wastewater Operations – The emission units associated with the BCM wastewater operations can generally be described as storage and transfer facilities (wastewater tanks, containers and individual drain systems) and treatment facilities (chemical wastewater treatment plant, incineration, or offsite treatment). The specific emission units are described in Sections D.8, D.10, D.11, D.12, D.13, D.18 and D.19 of this permit.

(b) Fermented Products Wastewater Operations – The emission units associated with the fermented products wastewater operations can generally be described as storage and transfer facilities (biosolids tanks) and treatment facilities (biological wastewater treatment plant. The specific emission units are described in Section D.5 of this permit. The wastewater operations associated with fermented products are not subject to the storage, transfer and treatment requirements of this section of the permit because the wastewater does not meet the definition of affected or Group 1 wastewater.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.17.1 Definition of Wastewater [40 CFR 63.1251, 40 CFR 63.1256(a)(1)(i), 40 CFR 63.2550, 40 CFR 63.101, 63.100(f)]

(a) The Pharmaceutical MACT defines wastewater, point of determination (POD), and affected wastewater stream as follows:

(1) Wastewater is as any water that is discarded from a pharmaceutical manufacturing process unit (PMPU) through a single POD that contains an annual average concentration of partially soluble and/or soluble HAP compounds of at least 5 parts per million by weight and a load of at least 0.05 kg/yr. Wastewater does not include the following:

(A) Stormwater from segregated sewers;

(B) Water from fire-fighting and deluge systems, including testing of such systems;

(C) Spills;

(D) Water from safety showers;

(E) Samples of a size not greater than reasonably necessary for the method of analysis that is used;

(F) Equipment leaks;

(G) Wastewater drips from procedures such as disconnecting hoses after clearing lines;

(H) Noncontact cooling water; and

(I) Primary waste (waste with a net positive heating value).

(2) POD is defined as the point where a wastewater stream exits the process,

storage tank, or last recovery device. If soluble and/or partially soluble HAP compounds are not recovered from water before discharge, the discharge point from the process equipment or storage tank is a POD. If water streams are routed to a recovery device, the discharge from the recovery device is a POD. There can be more than one POD per process or pharmaceutical manufacturing process unit.

(3) Affected wastewater stream is defined as follows:

(A) Any wastewater stream containing partially soluble HAP compounds at an annual average concentration greater than 1300 ppmw, and the total soluble and partially soluble HAP load in all wastewater from the PMPU exceeds 0.25 Mg/yr [40 CFR 63.1256(a)(1)(i)(A)]; or

(B) Any wastewater stream containing partially soluble and/or soluble HAP compounds at an annual average concentration greater than 5200 ppmw, and the total soluble and partially soluble HAP load in all wastewater from the PMPU exceeds 0.25 Mg/yr [40 CFR 63.1256(a)(1)(i)(B)].

Maintenance wastewater is not considered an affected wastewater stream.

(b) The MON defines wastewater, POD, and Group 1 wastewater as follows:

(1) Wastewater is any water that is discarded from a miscellaneous organic chemical manufacturing process unit (MCPU) or control device through a single POD that contains either an annual average concentration of compounds in 40 CFR Part 63 Subpart FFFF tables 8 (partially soluble HAP) and 9 (soluble HAP) of at least 5 ppmw and has an annual average flowrate of 0.02 liters per minute or greater; or an annual average concentration of compounds in tables 8 and 9 of at least 10,000 ppmw at any flowrate.. Wastewater does not include the following:

(A) Stormwater from segregated sewers;

(B) Water from fire-fighting and deluge systems, including testing of such systems;

(C) Spills;

(D) Water from safety showers;

(D) Samples of a size not greater than reasonably necessary for the method of analysis that is used;

(E) Equipment leaks;

(F) Wastewater drips from procedures such as disconnecting hoses after clearing lines;

(G) Noncontact cooling water; and

(H) Primary waste (waste with a net positive heating value).

(2) POD is defined as the point where process wastewater exits the MCPU or control device.

(3) Group 1 wastewater stream is defined as any process wastewater stream with

either:

(A) Total annual average concentration of MON Table 8 compounds greater than or equal to 10,000 ppmw at any flowrate, and the total annual load of MON Table 8 compounds greater than or equal to 200 lb/yr; or

(B) Total annual average concentration of MON Table 8 compounds greater than or equal to 1,000 ppmw, and the annual average flowrate is greater than or equal to 1 l/min; or

(C) Combined total annual average concentration of MON Tables 8 and 9 compounds greater than or equal to 30,000 ppmw and the combined total annual load of MON Tables 8 and 9 compounds greater than or equal to 1 tpy

Maintenance wastewater is not considered a Group 1 wastewater stream.

(c) The HON defines wastewater, POD, and Group 1 wastewater as follows:

(1) Wastewater is any water that is discarded from a chemical manufacturing process unit (CMPU) that contains either an annual average concentration of compounds in 40 CFR Part 63 Subpart F Table 9 of at least 5 ppmw and has an annual average flowrate of 0.02 liters per minute or greater; or an annual average concentration of compounds in 40 CFR Part 63 Subpart F Table 9 of at least 10,000 ppmw at any flowrate. Wastewater means process wastewater or maintenance wastewater. Wastewater does not include the following:

(A) Stormwater from segregated sewers;

(B) Water from fire-fighting and deluge systems, including testing of such systems;

(C) Spills; and

(D) Water from safety showers.

(2) POD is defined as the point where process wastewater exits the CMPU or control device.

(3) Group 1 wastewater stream is defined as any process wastewater stream with either:

(A) Total annual average concentration of HON Table 9 compounds greater than or equal to 10,000 ppmw at any flowrate; or

(B) Total annual average concentration of HON Table 9 compounds greater than or equal to 1,000 ppmw, and the annual average flowrate is greater than or equal to 10 l/min.

Maintenance wastewater is not considered a Group 1 wastewater stream.

D.17.2 Maintenance Wastewater [40 CFR 63.1256(a)(4)(i), 40 CFR 63.2485 and Table 7, 40 CFR 63.105]

The Permittee shall prepare a maintenance wastewater plan that is implemented as part of the Startup, Shutdown, and Malfunction (SSM) Plan and includes a description of maintenance procedures for management of wastewater generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., a maintenance turnaround) and during periods which are not shutdowns (i.e., routine maintenance).

D.17.3 Storage and Transfer of Affected Wastewater [40 CFR 63.1256(b), (d), and (e), 40 CFR 63.2485 and Table 7, 40 CFR 63.132, 63.133, 63.135 and 63.136]

(a) The following emission units are used to store or transfer affected wastewater and/or Group 1 wastewater streams from the BCM operations:

(1) BCM Containers – The emission units and performance standards are described in Section D.11 of this permit.

(2) BCM Individual Drain Systems – These emission units and performance standards for the individual drain systems are described in Section D.8 of this permit.

(3) Affected Wastewater Tanks – These emission units and performance standards are streamlined with the requirements for BCM waste tanks described in Section D.10 of this permit.

(b) The emission units in the fermented products operations do not store or transfer affected wastewater.

D.17.4 Treatment of Affected Wastewater [40 CFR 63.1256, 40 CFR 63.2485 and Table 7, 40 CFR 63.145]

Pursuant to the Pharmaceutical MACT requirements under 40 CFR 63.1256 and MON/HON requirements under 40 CFR 63.2550 and 63.145 (respectively), the affected wastewater and residuals (subject to Pharmaceutical MACT) and Group 1 wastewater streams and residuals (subject to either the MON or HON) shall be treated using the following methods as applicable:

(a) Enhanced biological treatment system – The equipment and performance standards for the treatment of affected wastewater using the enhanced biological treatment system are described in Section D.18 of this permit.

(b) Waste incineration – The equipment and performance standards for the thermal destruction of the affected wastewater by incineration are described in Sections D.12 and D.13 of this permit.

(c) Transfer of affected wastewater streams for offsite treatment – The performance standards for offsite disposal of affected wastewater are described in Section D.19 of this permit.

Testing and Monitoring Requirements [326 IAC 2-7-6(1) (6)] [326 IAC 2-7-5(1)]

D.17.5 Testing and Monitoring Requirements

The requirements for the storage, transfer and treatment of the affected wastewater are described in Sections D.8, D.10, D.11, D.12, D.13, D.18 and D.19 of this permit.

Record Keeping and Reporting Requirements [326 IAC 2-2, 2-7-10.5]

D.17.6 Record keeping and Reporting Requirements

(a) In accordance with 40 CFR 63.1256(a)(4)(ii), 63.2485 and 63.105, the Permittee shall modify and update the information required in Condition D.17.2 as needed following each maintenance procedure based on the actions taken and the wastewater generated in the procedure.

(b) Each POD as defined in Condition D.17.1 (a)(2), (b)(2) and (c)(2) shall be identified and its wastewater HAP concentration documented in the On-Site Implementation Log (OSIL) as required by 40 CFR 63.1259(b)(6), 40 CFR 63.1251, 40 CFR 63.2525(b), and 63.2550 for Operating Scenario.

Alternative Operating Scenarios [326 IAC 2-7-20(d)]

D.17.7 Alternative Operating Scenarios

(a) For scenarios in which reconstruction commenced after April 2, 1997 on the Permittee's Pharmaceutical MACT-subject affected source or construction commenced after April 2, 1997 or reconstruction commenced after October 21, 1999 for a PMPU dedicated to manufacturing a single product that has the potential to emit 10 tons per year of any one HAP or 25 tons per year of combined HAP [40 CFR 63.1250(b)], the Permittee shall comply with the provisions applicable to a Pharmaceutical MACT affected wastewater new source, Reconstruction in the Pharma MACT has the meaning given in §63.2, except that "affected or previously unaffected stationary source" shall mean either "affected facility" or "PMPU." [63.1251]. The Permittee shall comply with the requirements in D.17.2 through D.17.6.

(b) For scenarios in which reconstruction commenced after April 4, 2002 on the Permittee's facility-wide collection of MCPU and heat exchange systems, wastewater, and waste management units that are associated with affected manufacturing materials [described in §63.2435(b)(1)] or construction or reconstruction of the MCPU after April 4, 2002 commenced on a dedicated MCPU that has the potential to emit 10 tons per year (tpy) of any one HAP or 25 tpy of combined HAP, the Permittee shall comply with the provisions applicable to a MON Group 1 wastewater stream new source [40 CFR 63.2485(c), 63.2550, 63.132(d)]. For the purposes of this condition, an MCPU is an affected source in the definition of the term "reconstruction" in §63.2 [40 CFR 63.2440]. The Permittee shall comply with the requirements in D.17.2 through D.17.6.

(c) The Permittee shall keep a log of the scenario under which the wastewater stream is operating according to 326 IAC 2-7-5(9)(A). A summary of these records shall be included in the annual compliance certification in accordance with 326 IAC 2-7-5(9)(C).

SECTION D.18 CHEMICAL WASTEWATER TREATMENT PLANT OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14)]:

(a) The following emission units are subject to applicable requirements described or referred to in this D section. These emission units represent the enhanced biological treatment system.

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	Control Device
BCM Wastewater Treatment Plant (WWTP):				
T78-TK511	Activated Sludge Tank	Atmosphere	8 million gallons	N/A
T78-TK512	Activated Sludge Tank	Atmosphere	8 million gallons	N/A

(b) The following emission units of the wastewater treatment system are not subject to applicable requirements described in this D section.

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	Control Device
BCM Wastewater Treatment Plant (WWTP):				
T78-TK517*	Clarifier Influent Tank	Atmosphere	27,000 gal	N/A
T78-TK518*	Clarifier Influent Tank	Atmosphere	27,000 gal	N/A
T78-TK520A*	Clarifier	Atmosphere	1.4 million gal	N/A
T78-TK520B*	Clarifier	Atmosphere	1.4 million gal	N/A
T78-TK520C*	Clarifier	Atmosphere	1.4 million gal	N/A
T78-TK522*	Thickener	Atmosphere	1.3 million gal	N/A
T78-TK523*	Lift Station	Atmosphere	20,500 gal	N/A
T78-TK550*	Emergency Diversion Tank	Atmosphere	900,000 gal	N/A
T78-TK551*	Sludge Collection Tank	Atmosphere	700,000 gal	N/A
TK525*	Sludge Tank	Atmosphere	193,000 gal	N/A
TK526*	Sludge Tank	Atmosphere	193,000 gal	N/A

* Emission units marked with an asterisk are insignificant activities as defined by 326 IAC 2-7-1(21)(A)-(C) and 326 IAC 2-7-1(21)(G)(ix)(AA).

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.18.1 Pharmaceutical MACT, MON and HON Standards [40 CFR 63.1256, 40 CFR 63.683(b)(2), 40 CFR 63.2485 and Table 7, 40 CFR 63.138, 40 CFR 63.145(g) and (h)]

(a) Pursuant to the Pharmaceutical MACT standards for wastewater [40 CFR 63.1256(g)(10)], MON standards for wastewater [40 CFR 63.2485 and Table 7, 40 CFR 63.138, 63.145(g) and (h)], and HON standards for wastewater [40 CFR 63.138, 63.145(g) and (h)], the Permittee may use the enhanced biological treatment system (activated sludge tank T78-TK511 or T78-TK512) to treat affected wastewater streams, defined in Section D.17 of this permit, except:

(1) Mixed (soluble and partially soluble HAP) wastewater streams greater than 5200 ppmw, where the partially soluble HAP component is equal to or greater than 50 ppmw; or

(2) Wastewater streams containing combined partially soluble HAPs greater than 1300 ppmw.

(b) Pursuant to the Pharmaceutical MACT standards for wastewater [40 CFR 63.1251 and 40 CFR 63.1256(g)(10)], MON standards for wastewater [40 CFR 63.2485 and Table 7, 40 CFR 63.111], and HON standards for wastewater [40 CFR 63.138, 63.145(g) and (h)], the Permittee shall maintain a minimum mixed liquor volatile suspended solids (biomass) concentration of 1 kg/cubic meter (1,000 mg/l) of the mixed liquor in the enhanced biological treatment system.

Testing and Monitoring Requirements [326 IAC 2-7-6(1) (6)] [326 IAC 2-7-5(1)]

D.18.2 Sampling and Analysis Requirements [40 CFR 63.1258(g)(2), 40 CFR 63.143, 40 CFR 63.145(h)]

(a) In accordance with 40 CFR 63.145(h), the BCM chemical wastewater treatment plant is exempt from performance testing requirements if at least 99% by weight of all compounds in 40 CFR Part 63 Subpart G Table 36 present in the aggregate wastewater stream are on List 1 of 40 CFR Part 63 Subpart G Table 36.

(b) Pursuant to the Pharmaceutical MACT standards [40 CFR 63.1258(g)(2)] and MON standards [40 CFR 63.2485 and Table 7, 40 CFR 63.143], the Permittee shall measure the following parameters for each enhanced biological treatment unit in use at least once per week and record the weekly average data:

(1) Total suspended solids (TSS), chemical oxygen demand (COD); and

(2) Biomass (VSS) concentration.

Recordkeeping and Reporting Requirements [326 IAC 2-2, 2-7-10.5]]

D.18.3 Record Keeping and Reporting Requirements

(a) The Permittee shall maintain the sampling and analysis records required by Condition D.18.2 in accordance with the Pharmaceutical MACT record keeping requirements [40 CFR 63.1259(b)(1)].

(b) The Permittee shall include in the quarterly periodic report all instances in which the weekly average biomass value is less than 1 kg/cubic meter or in which the TSS or COD are outside of the permit limits set forth in the facility's National Pollutant Discharge Elimination System permit.

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.18.4 Modifications and Construction: Advance Approval of Permit Conditions

The emission units described in this D section are not subject to the advance approval permit conditions.

SECTION D.19 TRANSFER OF AFFECTED WASTEWATER FOR OFFSITE TREATMENT CONDITIONS OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14)]:

(a) Shipment of affected wastewater generated onsite to an offsite treatment facility; or

(b) Receipt of an offsite affected wastewater to be treated onsite.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.19.1 Shipment of Affected or Group 1 Wastewater to an Offsite Treatment Facility [40 CFR 63.1256(a)(5), 40 CFR 63.2485 and Table 7, 40 CFR 63.132(g)]

(a) For affected wastewater from pharmaceutical manufacturing, pursuant to the Pharmaceutical MACT standards for wastewater [40 CFR 63.1256(a)(5)(i)(B)], the Permittee shall include a notice with each shipment of affected wastewater or residual removed from affected wastewater to an offsite treatment facility. The notice shall state that the affected wastewater or residual contains organic HAP that must be treated in accordance with the treatment requirements of the Pharmaceutical MACT standards. When the transport is continuous or ongoing, the notice shall be submitted to the treatment operator initially and whenever there is a change in the required treatment.

(b) For affected wastewater from pharmaceutical manufacturing, pursuant to the Pharmaceutical MACT standards for wastewater [40 CFR 63.1256(a)(5)(ii)], the Permittee shall not transfer the affected wastewater or residual unless the transferee has submitted to the EPA a written certification that the transferee will manage and treat any affected wastewater or residual removed from affected wastewater received from a source subject to the requirements of this subpart in accordance with the treatment requirements of the Pharmaceutical MACT standards.

(c) For Group 1 wastewater from miscellaneous organic chemical manufacturing, pursuant to the MON standards for wastewater [40 CFR 63.2485 and Table 7, 40 CFR 63.132(g)], the Permittee shall include a notice with each shipment of Group 1 wastewater or residual removed from affected wastewater to an offsite treatment facility. The notice shall state that the Group 1 wastewater or residual contains organic HAP that must be treated in accordance with the treatment requirements of the MON standards. When the transport is continuous or ongoing, the notice shall be submitted to the treatment operator initially and whenever there is a change in the required treatment.

(d) For Group 1 wastewater from miscellaneous organic chemical manufacturing, pursuant to the MON standards for wastewater [40 CFR 63.2485 and Table 7, 40 CFR 63.132(g)], the Permittee shall not transfer the affected wastewater or residual unless the transferee has submitted to the EPA a written certification that the transferee will manage and treat any affected wastewater or residual removed from affected wastewater received from a source subject to the requirements of this subpart in accordance with the treatment requirements of the MON standards. This notification is not required if the Permittee ships wastewater to an offsite treatment facility that meets the requirements of 40 CFR 63.138(h) [treatment in a RCRA unit] and the Permittee has documented in the notification of compliance status report that the wastewater will be treated at as hazardous waste at a facility that meets the requirements of 40 CFR 63.138(h).

(e) For Group 1 wastewater from chemical manufacturing, pursuant to the HON standards for wastewater [40 CFR 63.132(g)], the Permittee shall include a notice with each shipment of Group 1 wastewater or residual removed from affected wastewater to an offsite treatment facility. The notice shall state that the Group 1 wastewater or residual contains organic HAP that must be treated in accordance with the treatment requirements of the HON standards. When the transport is continuous or ongoing, the notice shall be submitted to the treatment operator initially and whenever there is a change in the required treatment.

(f) For Group 1 wastewater from chemical manufacturing, pursuant to the HON standards for wastewater [40 CFR 63.132(g)], the Permittee shall not transfer the affected wastewater or residual unless the transferee has submitted to the EPA a written certification that the transferee will manage and treat any affected wastewater or residual removed from affected wastewater received from a source subject to the requirements of this subpart in accordance with the treatment requirements of the HON standards. This notification is not required if the Permittee ships wastewater to an offsite treatment facility that meets the requirements of 40 CFR 63.138(h) [treatment in a RCRA unit] and the Permittee has documented in the notification of compliance status report that the wastewater will be treated at as hazardous waste at a facility that meets the requirements of 40 CFR 63.138(h).

D.19.2 Receipt of Offsite Affected or Group 1 Wastewater for Onsite Treatment [40 CFR 63.1256(a)(5), 40 CFR 63.2485 and Table 7, 40 CFR 63.132(g)]

(a) Where the Permittee is the transferee, the Permittee shall submit to EPA a written certification that it will manage and treat any affected wastewater or residual removed from affected wastewater received from a source subject to the requirements of this subpart in accordance with the treatment requirements of the Pharmaceutical MACT standards for wastewater [40 CFR 63.1256(a)(5)(ii) and (iv)]. The Permittee may revoke its certification as allowed under 40 CFR 63.1256(a)(5)(iii).

(b) Where the Permittee is the transferee, the Permittee shall submit to EPA a written certification signed by the responsible official that it will manage and treat any Group 1 wastewater or residual removed from affected wastewater received from a source subject to the requirements of 40 CFR Part 63 Subpart FFFF in accordance with the treatment requirements 40 CFR Part 63 Subpart FFFF. The Permittee may revoke its certification as allowed under 40 CFR 63.132(g)(2).

Record Keeping and Reporting Requirements [326 IAC 2-2, 2-7-10.5]

D.19.3 Record keeping and Reporting Requirements

(a) The Permittee shall keep records of all notifications required by Conditions D.19.1 and D.19.2 in accordance with 40 CFR 63.1259(g) and 40 CFR 63.2525(a).

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.19.4 Modifications and Construction: Advance Approval of Permit Conditions

The emission units described in this D section are not subject to the advance approval permit conditions.

SECTION D.20 BCM SUPPORT OPERATIONS – TRANSFER RACK OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-7-5(14)]:

Emission Unit ID	Emission Unit Description**	Stack/Vent	Nominal Capacity	Control Device
Building T146				
T146-SWRACK	Transfer Rack	RTO	NA	RTO
Building T19				
T19-NRACK	Transfer Rack	T79	NA	T79
T19-SRACK	Transfer Rack	T79	NA	T79

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.20.0 VOC PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 Prevention of Significant Deterioration (PSD), the VOC Best Available Control Technology (BACT) for BCM and BCM Support Operations – Transfer Rack Operations is to route emissions to either a regenerative thermal oxidizer (RTO) or direct incineration (T79 Fume Incinerator) to control VOC emissions to a volumetric concentration of no more than 20 parts per million (ppmv) based on a 24-hour average or reduce VOC emissions by a control efficiency of 98% or more.

D.20.1 Standards for BCM Support Transfer Racks [40 CFR 63.2475, 40 CFR 63.2450(c)(2)]

The following streamlined standards for the BCM support transfer racks satisfy the requirements of the MON [40 CFR 63.2475 and 63.2450(c)(2)] and PSD BACT requirements [326 IAC 2-2-3]:

(a) The emission limits and standards applicable for the T146-SWRACK are described in Condition D.6.1(a) of this permit in accordance with the combined emission stream standards in 40 CFR 63.2450(c)(2). The exception and alternative operating scenarios described in Condition D.6.2(b) and D.6.10, respectively, also apply to the T146-SWRACK.

(b) The emission limits and standards applicable for the T19-NRACK and T19-SRACK are described in Condition D.7.1(a) of this permit in accordance with the combined emission stream standards in 40 CFR 63.2450(c)(2) and 63.112(e)(3)(ii).

D.20.2 Leak Detection and Repair (LDAR) Standards [326 IAC 2-2-3, 40 CFR 63.1255, 40 CFR 63.2535(d)]

The LDAR standards that apply to components associated with the transfer rack operations are described in Sections E.1 and E.2 of this permit.

D.20.3 Startup, Shutdown and Malfunction Requirements [40 CFR 60.8(c), 40 CFR 40 CFR 63.2520(d), 326 IAC 2-2-3]

MON [40 CFR 63.2520(d)], Volatile Organic Liquid Storage Vessel Standards [40 CFR 60.7, 40 CFR 60.8(c)] and PSD BACT SSM Requirements [326 IAC 2-2-3]

(a) The startup, shutdown and malfunction (SSM) Plan requirements are described in Sections D.14.3 and D.15.3.

(b) The SSM requirements for the RTO control system or T79 control system are described in Sections D.14.3 and D.15.3 of this permit, respectively.

Testing and Monitoring Requirements [326 IAC 2-7-6(1) (6)] [326 IAC 2-7-5(1)]

D.20.4 Testing Requirements

The testing requirements for the RTO control system and T79 fume incinerator control system, and associated closed-vent systems that control emissions from the emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

D.20.5 Monitoring Requirements

The monitoring requirements for the RTO control system, T79 fume incinerator control system, and associated closed-vent systems that control emissions from the emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

Record Keeping and Reporting Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12, 326 IAC 2-2, and 40 CFR 63 Subpart FFFF]

D.20.6 Record Keeping and Reporting Requirements

(a) Record Keeping Requirements

The record keeping requirements for the RTO control system, T79 fume incinerator control system, and associated closed-vent systems that control emissions from the emission units listed in this section are described in Sections D.14 and D.15 of this permit, respectively.

(b) Periodic Reporting Requirements

The streamlined quarterly reporting requirements are described in Sections D.14 for the RTO control system and associated closed-vent system and D.15 for the T79 fume incinerator and associated closed-vent system, which satisfy the MON [40 CFR 63.2520(e)] and PSD BACT requirements [326 IAC 2-1.1-11].

(c) Immediate Reporting Requirements

The immediate reporting requirements for the PSD BACT requirements [326 IAC 2-2-3] are described in Section D.14.10(c)(1).

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]

D.20.7 Modifications and Construction: Advance Approval of Permit Conditions

(a) The Permittee may modify any existing emission units listed in this section of the permit without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the modified emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

(b) The Permittee may construct and install new emission units of the types described in this D section without obtaining a source modification approval (otherwise required by 326

IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by and 326 IAC 2-2), provided the new emission units are subject to the same applicable requirements listed in this D section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

Alternative Operating Scenarios [326 IAC 2-7-20(d)]

D.20.8 Alternative Operating Scenario

(a) The alternative operating scenarios described in Condition D.6.10 may also apply to the T146-SWRACK. The record keeping requirements for these alternative operating scenarios are described in Condition D.6.10(c) to identify the scenario under which the T146-SWRACK is operating.

SECTION D.21 DEGREASER OPERATION CONDITIONS

Emissions Unit Description: Insignificant Activities:

Cold cleaning organic solvent degreasing operations that do not exceed 145 gallons of solvent usage per 12 months, except if subject to 326 IAC 20-6.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

D.21.1 Cold Cleaner Degreasers Constructed after July 1, 1990 [326 IAC 8-3-2]

(a) Pursuant to 326 IAC 8-3-1(c)(2)(A)(ii) for cold cleaner degreasers without remote solvent reservoirs constructed after July 1, 1990 and located anywhere in the state, the Permittee shall ensure that the following control equipment and operating requirements are met:

(1) Equip the degreaser with a cover.

(2) Equip the degreaser with a device for draining cleaned parts.

(3) Close the degreaser cover whenever parts are not being handled in the degreaser.

(4) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases.

(5) Provide a permanent, conspicuous label that lists the operating requirements in subdivisions (3), (4), (6), and (7).

(6) Store waste solvent only in closed containers.

(7) Prohibit the disposal or transfer of waste solvent in such a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

(b) The owner or operator of a cold cleaner degreaser subject to this subsection shall ensure the following additional control equipment and operating requirements are met:

(1) Equip the degreaser with one (1) of the following control devices if the solvent is heated to a temperature of greater than forty-eight and nine-tenths (48.9) degrees Celsius (one hundred twenty (120) degrees Fahrenheit):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.

(B) A water cover when solvent used is insoluble in, and heavier than, water.

(C) A refrigerated chiller.

(D) Carbon adsorption.

(E) An alternative system of demonstrated equivalent or better control as those outlined in clauses (A) through (D) that is approved by the department. An alternative system shall be submitted to the U.S. EPA as a SIP revision.

(2) Ensure the degreaser cover is designed so that it can be easily operated with one (1) hand if the solvent is agitated or heated.

(3) If used, solvent spray:

(A) must be a solid, fluid stream; and

(B) shall be applied at a pressure that does not cause excessive splashing.

D.21.2 Material Requirements for cold cleaner degreasers [326 IAC 8-3-8]

Pursuant to 326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers), on and after January 1, 2015, the Permittee shall not operate a cold cleaning degreaser with a solvent that has a VOC composite partial vapor pressure that exceeds one (1) millimeter of mercury (nineteen-thousandths (0.019) pound per square inch) measured at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.21.3 Record Keeping Requirements

To document the compliance status with Condition D.1.3, on and after January 1, 2015, the Permittee shall maintain the following records for each purchase of solvent used in the cold cleaner degreasing operations. These records shall be retained on-site or accessible electronically for the most recent three (3) year period and shall be reasonably accessible for an additional two (2) year period.

(a) The name and address of the solvent supplier.

(b) The date of purchase.

(c) The type of solvent purchased.

(d) The total volume of the solvent purchased.

(e) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

SECTION D.22 ARCHITECTURAL AND INDUSTRIAL MAINTENANCE COATINGS CONDITIONS

Emissions Unit Description:

Entire source.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.22.1 Architectural and Industrial Maintenance (AIM) Coatings [326 IAC 8-14]

(a) Pursuant to 326 IAC 8-14, on and after October 1, 2011, the Permittee shall comply with the applicable standards for Architectural and Industrial Maintenance (AIM) Coatings. 326 IAC 8-14 is not Federally enforceable.

(b) The Permittee shall comply with the standards for AIM coatings according to 326 IAC 8-14-3.

(c) The Permittee shall comply with the following work practices:

(1) All AIM coatings containers used to apply the contents therein to a surface directly from the container by any of the following shall be closed when not in use:

(A) pouring;
(B) siphoning;
(C) brushing;
(D) rolling;
(E) padding;
(F) ragging; or
(G) other means;

(2) Containers of any VOC-containing materials used for thinning and cleanup shall be closed when not in use.

SECTION E.1 LEAK DETECTION AND REPAIR (LDAR) CONDITIONS FOR BCM PROCESS SYSTEM COMPONENTS

Emissions Unit Description [326 IAC 2-7-5(14)]: [326 IAC 2-7-5(14)]

(a) BCM process systems consist of process operations and non-waste storage serving bulk pharmaceutical manufacturing operations. LDAR applies to BCM process system components such as pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves and lines, valves, connectors, instrumentation systems, control devices, and closed-vent systems intended to operate in volatile organic hazardous air pollutant and/or volatile organic compound (VOHAP/VOC) service for 300 hours or more during the calendar year. In VOHAP/VOC service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight VOHAP/VOC.

(b) LDAR BCM process system components are located from the point at which raw material serving the BCM operations is unloaded at the plant site to the point of determination (POD) or point where waste exits the pharmaceutical manufacturing process unit (PMPU). The closed-vent systems not used to control emissions from LDAR components are not subject to the conditions of this section, but instead are subject to the conditions in Sections D.14, and D.15, as applicable.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

E.1.1 LDAR Standards for BCM Process System Components [40 CFR 63.1255, 40 CFR 63.2535(d), 40 CFR Part 63 Subpart I, 326 IAC 8-5-3(b)(6), 326 IAC 2-2, CP157-4148 (Revised by this permit)]

Except as provided in Condition E.1.2, the following LDAR standards satisfy the requirements of the Pharmaceutical Production MACT (Pharmaceutical MACT) LDAR standards [40 CFR 63.1255], Miscellaneous Organic National Emission Standards for Hazardous Air Pollutants (MON) LDAR standards [40 CFR 63.2535(d)], Negotiated Regulation for Equipment Leaks [40 CFR Part 61 Subpart I], Best Available Control Technology (BACT) LDAR requirements [326 IAC 2-2-3], Reasonably Available Control Technology (RACT) LDAR requirements for synthesized pharmaceutical manufacturing operations [326 IAC 8-5-3(b)(6)], and construction permit [CP157-4148] requirements for LDAR components associated with the research and development operations in Building T171:

(a) The Permittee shall implement the LDAR program under 40 CFR 63.1255 for all BCM process system component types listed in item (a) of the facility description section from the point at which raw material serving BCM is unloaded at the plant site to the point of determination (POD) or point where waste exits the pharmaceutical manufacturing process unit (PMPU) or miscellaneous organic chemical manufacturing process units (MCPU).

(b) The Permittee conducted an initial monitoring survey that included the total number of each existing BCM process component type and initial monitoring as follows:

(1) Existing BCM process system components in VOHAP service were initially monitored between October 21, 2002 and October 21, 2003.

(2) Existing BCM process system components in VOC service were initially monitored for purposes of this permit between October 21, 2002 and October 21, 2003.

(3) Subsequent monitoring periods shall be calendar periods, beginning October 22, 2003.

(c) Each new or changed BCM process system component in VOC/VOHAP service identified during the course of each monitoring period shall be incorporated into the existing component list as necessary within 90 days, or by the next LDAR Periodic Report, following the end of the monitoring period for the type of component monitored, whichever is later.

(d) The following BCM process system components in VOHAP/VOC service shall comply with design standards, be operated in accordance with work practice standards or undergo periodic LDAR monitoring in accordance with the provisions cited below. Periodic LDAR monitoring shall be performed in accordance with 40 CFR 60, Appendix A, Method 21 and 40 CFR 63.1255(b)(4)(v). The regulatory language cited by reference in this section appears in full in Appendix A.

(1) Pumps in light liquid service shall be operated in accordance with the standard at 63.1255(c). This section provides, generally and in part:

(A) Single seal pumps shall undergo periodic monitoring and visual inspections;

(B) Dual mechanical seal pumps shall meet design, operation, inspection, and alarm requirements;

(C) Pumps designed without a shaft penetrating the pump housing are not required to be inspected or monitored; and

(D) Pumps equipped with a closed-vent system capable of capturing and transporting any leakage from the seals back to the process or to a control device are not required to be inspected or monitored.

(2) Compressors shall be operated in accordance with the standards at 63.1255(b)(3), which requires compliance with 63.164. This section provides, generally and in part:

(A) Compressors with barrier fluid seal systems shall meet design, operation, inspection, and alarm requirements.

(B) Compressors equipped with a closed-vent system to capture and transport leakage from the compressor drive shaft seal back to a process or a fuel gas system or to a control device are not required to be inspected or monitored.

(C) Compressors designated to operate with an instrument reading of less than 500 ppmv above background shall be monitored initially and annually.

(3) Pressure relief devices in gas/vapor service shall be operated in accordance with the standard at 63.1255(b)(3), which requires compliance with 63.165. This section provides, generally and in part:

(A) Except during pressure releases, pressure relief devices shall be operated with an instrument reading of less than 500 ppmv above background.

(B) After each pressure release, the device shall be returned to a monitored condition of less than 500 ppmv above background within 5 calendar days after the release, except if delay of repair applies.

(C) A rupture disk satisfies conditions E.1.1 (d)(3)(A) and (B) without monitoring if it is replaced within 5 calendar days after each pressure release, except if delay of repair applies.

(D) Any pressure relief device satisfies conditions E.1.1 (d)(3)(A) and (B) without monitoring if it is routed to a process or fuel gas system or equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device.

(4) Sampling connection systems shall be operated in accordance with the standard at 63.1255(b)(3), which requires compliance with 63.166. This section provides, generally and in part:

(A) Gases displaced during filling of a sample container are not required to be captured or collected.

(B) Each sampling connection system shall be equipped with a closed-purge, closed-loop or closed-vent system, which shall:

(i) Return the purged process fluid directly to the process line;

(ii) Collect and recycle the purged process fluid to a process;

(iii) Be designed and operated to capture and transport the purged process fluid to a control device;

(iv) Collect, store, and transport the purged process fluid to a SOCMI/HON waste management unit (40 CFR Part 63, Subpart G) operated according to the provisions which apply to Group 1 wastewater streams, or to a treatment, storage, or disposal facility subject to regulation under 40 CFR Part 262, 264, 265 or 266 (a RCRA unit), or, if the purged fluids are not hazardous waste, to a facility with an appropriate State permit to manage municipal or industrial solid waste; or

(v) In-situ sampling systems, and sampling systems without purges, have no other obligations under this section.

(5) Open-ended valves or lines shall be operated in accordance with the standard at 63.1255(d). This section provides, generally and in part:

(A) Each open-ended valve and line shall be equipped with a cap, blind flange, plug or second valve, which shall seal the open end at all times except when operations require fluid flow through the open-ended valve or line, or during maintenance or repair.

(B) The cap, blind flange, plug or second valve shall be in place and closed within one hour of cessation of operations requiring fluid flow through the open-ended valve or line, or maintenance or repair. No records are required to document compliance with this provision.

(C) If a second valve is used, the valve on the process fluid end shall be closed before the other valve is closed.

(D) If a double block and bleed arrangement is used, the bleed valve may remain open during operations requiring venting the line between the block valves, but shall be closed otherwise in accordance with E.1.1 (d)(5)(B).

(E) Open-ended valves and lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are not required to comply with E.1.1 (d)(5)(A) through (C).

(F) Open-ended valves or lines containing materials, which would autocatalytically polymerize are not required to comply with E.1.1 (d)(5)(A) through (C).

(G) Open-ended valves or lines containing materials which could cause a serious safety hazard if capped or equipped with a double block and bleed system are not required to comply with E.1.1 (d)(5)(A) through (C).

(6) Valves in gas/vapor and light liquid service shall be operated in accordance with the standard at 63.1255(e). This section provides, generally and in part:

(A) Valves shall undergo periodic monitoring.

(B) Each monitoring period shall be determined by a calculation based on the percentage of leaking valves measured in prior monitoring periods.

(C) Valves may be placed into subgroups for periodic monitoring purposes, and may be reassigned among subgroups.

(D) After a leaking valve is repaired, it shall be monitored again within 3 months after repair. This monitoring may be considered part of the periodic monitoring, or may, if conducted prior to the periodic monitoring, be considered separately from the periodic monitoring data in determining percent leaking valves for the monitoring period.

(7) Closed-vent systems and control devices used to comply with LDAR shall be operated in accordance with the standard at 63.1255(b)(4)(ii). Operation of these systems, in conformance with Sections D.14 or D.15, shall constitute compliance with these requirements;

(8) Agitators in gas/vapor and light liquid service shall be operated in accordance with the standard at 63.1255(c). This section provides, generally and in part:

(A) Single seal agitators shall undergo periodic monitoring and visual inspections.

(B) Dual mechanical seal agitators shall meet design, operation, inspection, and alarm requirements.

(C) Agitators designed without a shaft penetrating the agitator housing are not required to be inspected or monitored.

(D) Agitators equipped with a closed-vent system capable of capturing and transporting any leakage from the seals back to the process or to a control device are not required to be inspected or monitored.

(9) Pumps, valves, connectors, and agitators in heavy liquid service, instrumentation systems, and pressure relief devices in liquid service shall be operated in accordance with the standard at 63.1255(b)(3), which requires compliance with 63.169. This section provides, generally and in part:

(A) If a component presents visual, audible, or olfactory evidence of a leak, the leak shall be deemed repaired without monitoring if the component meets any of the following:

(i) The visual, audible, or olfactory evidence has been eliminated;

(ii) No bubbles are observed at potential leak sites during a leak check using soap solutions; or

(iii) The system will hold a test pressure.

(B) If there is visual, audible, or olfactory evidence of a leak at one of these components, and the leak is not repaired without monitoring, the component shall be monitored within 5 calendar days to confirm whether a leak is in fact present.

(10) Connectors in gas/vapor and light liquid service shall be operated in accordance with the standard at 63.1255(b)(4)(iii) and 63.1255 (f)(4). This section provides, generally and in part:

(A) Connectors shall undergo periodic monitoring.

(B) Each monitoring period shall be determined by a calculation based on the percentage of leaking connectors measured in prior monitoring periods.

(C) Nonrepairable connectors may not be counted in monitoring period calculations. C_{AN} shall be set to zero in the percent leaking connector calculation.

(D) Inaccessible, ceramic, or ceramic-lined connectors are not required to be monitored, and are exempt from record keeping and reporting. If they are observed to be leaking, they shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except if delay of repair applies. There is no obligation to make a first attempt at repair within 5 days.

(E) Connectors that are not required to be monitored are not included in the calculation of the percentage of leaking connectors.

(F) An optional credit may be taken for removed connectors where the weld meets certain testing requirements.

(e) As an alternative to complying with E.1.1(d), except E.1.1(d)(7), BCM process system components may comply with 63.1255(b)(4)(iv), which incorporates by reference 63.178(b) (Alternative Means of Emission Limitation: Batch Processes) as follows:

(1) Testing shall occur in accordance with 63.178(b) and be conducted in accordance with 63.180(f) or (g); and

(2) Components must comply with the leak repair requirements before startup of a process as described in 63.178(b)(4).

(f) As an alternative to complying with E.1.1 (d), except E.1.1 (d)(7), BCM process system components may comply with 63.179 (Alternative means of emission limitation: Enclosed-vented process units), which requires that process units be enclosed in such a manner that all emissions from equipment leaks are vented through a closed-vent system to a control device. The enclosure is to be maintained under a negative pressure at all times while the process unit is in operation to ensure that all emissions are routed to the control device. The closed vent system and control device must comply with E.1.1 (d)(7).

(g) With the exception of equipment following the requirement of E.1.1(e) [except for pressure relief devices in gas/vapor service, which must be repaired in accordance with E.1.1(d)(3)] or (f), any visible audible, or olfactory leak containing VOHAP/VOC shall be considered a leak for purposes of the obligation to repair. If it is not clear whether the leak contains VOHAP/VOC, then Method 21 may be used to confirm whether a leak exists. For each component type, the relevant leak definition and leak repair requirements in E.1.1 (d) shall apply for this purpose. All leaks shall be marked as provided in 63.1255(a)(10).

(1) The Permittee shall initiate repair of any leak no later than 5 calendar days after identification, and complete the repair within 15 days after identification, except where delay of repair is allowed under 63.1255(b)(4)(i), which incorporates by reference 63.171. This shall not affect repair periods under Conditions E.1.1 (d)(3) or (e). 63.1255(b)(4)(i) provides, generally and in part:

(i) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next scheduled process unit shutdown.

(ii) Delay of repair for equipment for which leaks have been detected is allowed if the owner or operator determines that repair personnel would be exposed to an immediate danger if attempting to repair without a process shutdown. Such repair shall occur by the end of the next scheduled process shutdown.

(iii) Delay of repair of equipment for which leaks have been detected will be allowed for equipment that is isolated from the process and that does not remain in VOC/VOHAP service.

(iv) Delay of repair for valves, connectors, and agitators will be allowed if emissions immediate repair would result in greater emissions than delay of repair, and if purged material generated during the repair is collected and destroyed or recovered in a control device.

(v) Delay of repair for pumps will be allowed if the repair requires the use of a dual mechanical seal system, or a pump designed without an externally actuated shaft penetrating the pump housing, or ducting of the pump fugitive emissions to a closed vent system and control device, and is completed within 6 months.

(vi) 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, but the supplies, although adequately stocked, have been depleted. Delay of repair beyond the second process unit shutdown is not allowed unless the second shutdown occurs sooner than 6 months after the first shutdown.

(h) Alternative means of emission limitations not already included in 63.1255 may be approved in accordance with 63.1255(b)(3), which incorporates by reference 63.177.

E.1.2 Exceptions to LDAR Standards for BCM Process System Components [40 CFR 63.1250(d), 40 CFR 63.1251, 40 CFR 63.1255(a), 40 CFR 63.2435(c)(1), 40 CFR 63.2535(d)]

(a) The following facilities are not subject to the LDAR standards under this section of the permit:

(1) Research and development facilities, activities and equipment not subject to BACT or construction permit requirements;

(2) Reserved;

(3) Utilities and non-process lines;

(4) Bench scale processes;

(5) Equipment in vacuum service;

(6) Waste components (covered by Section E.2 of this permit).

(7) Fermented Products operations;

(8) Equipment in VOHAP/VOC service but that is in such service less than 300 hours per calendar year;

(9) Closed loop heat exchange systems; and

(10) Welded fittings.

(b) Equipment that is designated as unsafe to monitor, unsafe to inspect, difficult to monitor, difficult to inspect, or inaccessible shall comply with 63.1255(f). This section provides, generally, that accessible equipment shall be monitored according to a written plan that provides for monitoring as often as practicable, considering safety concerns, but not more often than otherwise applicable. Inaccessible equipment is not required to be routinely monitored at any time, although any observed leaks must be repaired within 15 days.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

E.1.3 Record Keeping and Reporting Requirements [326 IAC 2-7-5(3), 40 CFR 63.1255(g) and (h), 40 CFR 63.2535(d)]

(a) Records shall be kept in accordance with 63.1255(g), including but not limited to:

(1) Identification of components that are subject to the rule with information indicating their method of compliance, with justifications as appropriate, except that inaccessible, ceramic, or ceramic-lined connectors subject to 40 CFR 63.1255(f)(4) need not be identified;

(2) Schedule for monitoring connectors and valves and the percent connectors and valves found leaking;

(3) Design criteria and any changes to these criteria for each dual mechanical seal

system;

(4) List of equipment designated as unsafe to monitor/inspect or difficult to monitor/inspect and a copy of the plan for monitoring or inspecting such equipment;

(5) Equipment complying via the provisions of 40 CFR 63.178(c);

(6) List of equipment added since the last monitoring period, and

(7) If monitoring frequencies are adjusted for time in use, records demonstrating the proportion of the time the equipment is in VOC/VOHAP use during the calendar year;

(8) Records of visual inspections;

(9) Records of leaks detected, repair information, and delays of repair. The Permittee may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures shall be included in a document that is maintained at the plant site. Reasons for delay of repair may be documented by citing the relevant sections of the written procedure;

(10) Records of pressure tests, the test pressure, and the pressure drop observed during the test;

(11) Records of compressor and relief device compliance tests;

(12) Records for closed-vent systems and control devices subject to E.1.1(d)(7);

(13) For components in heavy liquid service, records demonstrating that they are in heavy liquid service;

(14) Identification of components (either by location, area, or group of equipment) exempt because they are in VOHAP/VOC service for less than 300 hours per year; and

(15) Records of alternative means of compliance determination.

(b) Reserved;

(c) Reporting requirements shall be conducted in accordance with 63.1255(h), including:

(1) LDAR Periodic Reports shall cover the monitoring periods from January 1 to June 30, and July 1 to December 31, respectively. Reports shall be submitted 30 days following the 6-month monitoring period. The report shall include any revisions to the information reported earlier if the method of compliance has changed since the last report. The report shall also contain the following information:

(A) For equipment not complying via the alternative standard, the Permittee shall report the following information for pumps, valves, agitators, and connectors subject to periodic LDAR monitoring:

(i) Number of leaks detected and percent leakers;

(ii) Number of leaks not repaired within the required timeframe;

(iii) An explanation of any delay of repairs;

(iv) Notice of a change to monthly monitoring for either pumps or valves, if applicable; and

(v) Notification of a change in connector monitoring alternatives, if applicable.

(B) Results of all monitoring required for applicable compressors, pressure relief devices in gas/vapor service, and closed-vent systems;

(i) Number of leaks not repaired within the required timeframe; and

(ii) An explanation of any delay of repairs.

(C) For equipment complying via the alternative standard at 1255(b)(4)(iv), the Permittee shall report the following information for each product process equipment train:

(i) Number of pressure tests conducted;

(ii) Number of instances where the equipment failed either a retest or 2 consecutive pressure tests;

(iii) Facts that explain any delay of repairs; and

(iv) Results of all monitoring to determine compliance for closed-vent systems used to comply with this section of the permit.

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12, 326 IAC 2-2]

E.1.4 Modifications and Construction: Advance Approval of Permit Conditions

(a) The Permittee may modify any existing components listed in this section of the permit without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the modified emission units are subject to the same applicable requirements listed in this E section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

(b) The Permittee may construct and install new emission units of the types described in this D section without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the new emission units are subject to the same applicable requirements listed in this E section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

Alternative Operating Scenarios [326 IAC 2-7-20(d), 40 CFR 63.2480, 63.100]

E.1.5 Alternative Operating Scenarios

(a) The Permittee may elect to operate equipment dedicated to a miscellaneous organic chemical manufacturing process units (MCPU) subject to 40 CFR Part 63 Subpart FFFF, in which case the Permittee shall comply with one of the following alternative operating scenarios instead of E.1.1 through E.1.3:

(1) Follow the equipment leak requirements in 40 CFR 63.2480 and 40 CFR Part 63 Subpart UU;

(2) Follow the equipment leak requirements in 40 CFR 63.2480 and 40 CFR Part 65 Subpart F; or

(3) Follow the equipment leak requirements in 40 CFR 63.2480 and 40 CFR Part 63 Subpart H. An MPCU meeting the requirements of a new affected source as defined in 40 CFR 63.2440(c) may not use 40 CFR Part 63 Subpart H to comply with the 40 CFR Part 63 Subpart FFFF equipment leak standards.

(b) The Permittee may elect to manufacture chemical(s) subject to 40 CFR Part 63 Subparts F and G, in which case the Permittee shall comply with the equipment leak requirements in 40 CFR Part 63 Subpart H for all equipment associated with the chemical(s) subject to 40 CFR Part 63 Subparts F and G instead of E.1.1 through E.1.3.

(c) The Permittee shall keep a log of the scenario under which the equipment is operating according to 326 IAC 2-7-5(9)(A). A summary of these records shall be included in the annual compliance certification in accordance with 326 IAC 2-7-5(9)(C).

SECTION E.2 LEAK DETECTION AND REPAIR (LDAR) CONDITIONS FOR BCM WASTE SYSTEM COMPONENTS

Emissions Unit Description [326 IAC 2-7-5(15)]:

(a) LDAR applies to BCM waste system components consisting of pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves and lines, valves, connectors, control devices, and closed-vent systems used to comply with this LDAR program, intended to operate in volatile organic hazardous air pollutant and/or volatile organic compound (VOHAP/VOC) service for 300 hours or more during the calendar year. In VOHAP/VOC service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight of total VOHAP/VOC.

(b) LDAR BCM waste system components are located from the point of generation (POG) or point of determination (POD), as applicable, to the last component prior to entering the hazardous waste combustor or being loaded onto tankers for transport offsite. The closed-vent systems not used to control emissions from LDAR components are not subject to the conditions of this section, but instead are subject to the conditions in Sections D.14 and D.15.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

E.2.1 LDAR Standards for BCM Waste System Components [40 CFR 63.691, 326 IAC 8-5-3(b)(6), 326 IAC 2-2, CP157-4148 (Revised by this permit)]

Except as provided in Condition E.2, the following LDAR standards satisfy the requirements of the Volatile Organic Liquid Storage Vessel Standards [40 CFR 60.110b], Offsite Waste and Recovery Operations (Offsite Waste) MACT Standards [40 CFR 63.691], Best Available Control Technology (BACT) requirements [326 IAC 2-2-3], Reasonably Available Control Technology (RACT) LDAR requirements for synthesized pharmaceutical manufacturing operations [326 IAC 8-5-3(b)(6)], and construction permit [CP157-4148] requirements for LDAR components associated with the research and development operations in Building T171:

(a) The Permittee shall implement the LDAR program under 40 CFR 61 Subpart V for all BCM waste system component types listed in item (a) of the facility description section from the point of determination (POD) or at the exit of the pharmaceutical manufacturing process unit (PMPU) to the last piece of regulated equipment prior to entering the hazardous waste combustor or loaded onto tankers for transport offsite.

(b) Existing BCM waste system components in VOC/VOHAP service are covered under 40 CFR 264 and 265, Subpart BB. Data taken and notifications submitted for purposes of Subpart BB shall satisfy the data and notification requirements for entry into the alternative standard at 40 CFR 61.243-1 and 40 CFR 61.243-2. Monitoring periods are calendar periods as defined at 40 CFR 61 Subpart V and 40 CFR 264 and 265, Subpart BB.

(c) Each new or changed BCM waste system component in VOC/VOHAP service identified during the course of each monitoring period shall be incorporated into the existing component list as necessary within 90 days, or by the next LDAR Periodic Report, following the end of the monitoring period for the type of component monitored, whichever is later.

(d) The following BCM waste system components in VOHAP/VOC service shall comply with design standards, shall be operated in accordance with work practice standards, or shall undergo periodic LDAR monitoring in accordance with the provisions cited below. Periodic LDAR monitoring shall be performed in accordance with 40 CFR 60, Appendix A, Method 21. The regulatory language cited by reference in this section appears in full in Appendix A.

(1) Pumps shall be operated in accordance with the standard at 61.242-2. This section provides, generally and in part:

(A) Single seal pumps shall undergo periodic monitoring and visual inspections.

(B) Dual mechanical seal pumps shall meet design, operation, inspection, and alarm requirements.

(C) Pumps designed without a shaft penetrating the pump housing shall be monitored initially and annually, but are not subject to other inspections.

(D) Pumps equipped with a closed-vent system capable of capturing and transporting any leakage from the seals back to the process or to a control device are not required to be inspected or monitored.

(E) Pumps designated as unsafe-to-monitor shall be monitored according to a written plan by which they are monitored as frequently as possible during safe-to-monitor times, but not more frequently than otherwise applicable.

(2) Compressors shall be operated in accordance with the standard at 61.242-3. This section provides, generally and in part:

(A) Compressors with barrier fluid seal systems shall meet design, operation, inspection, and alarm requirements.

(B) Compressors equipped with a closed-vent system to capture and transport leakage from the compressor drive shaft seal back to a process or a fuel gas system or to a control device are not required to be inspected or monitored.

(C) Compressors designated to operate with an instrument reading of less than 500 ppmv above background shall be monitored initially and annually.

(3) Pressure relief devices in gas/vapor service shall be operated in accordance with the standard at 61.242-4. This section provides, generally and in part:

(A) Except during pressure releases, pressure relief devices shall be operated with an instrument reading of less than 500 ppmv above background.

(B) After each pressure release, the device shall be returned to a monitored condition of less than 500 ppmv above background within 5 calendar days after the release, except if delay of repair applies.

(C) A rupture disk is satisfies conditions E.2.1 (d)(3)(A) and (B) without monitoring if it is replaced within 5 calendar days after each pressure release, except if delay of repair applies.

(D) Any pressure relief device satisfies conditions E.2.1 (d)(3)(A) and (B) without monitoring if it is routed to a process or fuel gas system or equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device.

(4) Sampling Connection Systems shall be operated in accordance with the standard at 61.242-5. This section provides, generally and in part:

(A) Gases displaced during filling of a sample container are not required to be captured or collected.

(B) Each sampling connection system shall be equipped with a closed-purge, closed-loop or closed-vent system, which shall:

(i) Return the purged process fluid directly to the process line;

(ii) Collect and recycle the purged process fluid;

(iii) Be designed and operated to capture and transport the purged process fluid to a control device;

(iv) Collect, store, and transport the purged process fluid to a SOCMI/HON waste management unit (40 CFR Part 63, Subpart G) operated according to the provisions which apply to Group 1 wastewater streams, or to a treatment, storage, or disposal facility subject to regulation under 40 CFR Part 262, 264, 265 or 266 (a RCRA unit), or, if the purged fluids are not hazardous waste, to a facility with an appropriate State permit to manage municipal or industrial solid waste; or

(v) In-situ sampling systems, and sampling systems without purges, have no other obligations under this section.

(5) Open-ended valves or lines shall be operated in accordance with the standard at 61.242-6. This section provides, generally and in part:

(A) Each open-ended valve and line shall be equipped with a cap, blind flange, plug or second valve, which shall seal the open end at all times except when operations require fluid flow through the open-ended valve or line, or during maintenance or repair.

(B) If a second valve is used, the valve on the process fluid end shall be closed before the other valve is closed.

(C) If a double block and bleed arrangement is used, the bleed valve may remain open during operations requiring venting the line between the block valves, but shall be closed otherwise in accordance with E.2.1 (d)(5)(B).

(D) Open-ended valves and lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are not required to comply with E.2.1 (d)(5)(A) through (C).

(E) Open-ended valves or lines containing materials, which would autocatalytically polymerize are not required to comply with E.2.1

(d)(5)(A) through (C).

(F) Open-ended valves or lines containing materials which could cause a serious safety hazard if capped or equipped with a double block and bleed system are not required to comply with E.2.1 (d)(5)(A) through (C).

(6) Valves shall be operated in accordance with the standard at 61.242-7. This section provides, generally and in part:

(A) Each valve shall be monitored monthly, except as provided below.

(B) Any valve may be monitored quarterly, in the first month of the quarter, if it has completed two successive months without a leak, as long as it does not leak.

(C) Each leaking valve shall be monitored monthly after it is repaired until it has completed two successive months without a leak.

(D) Valves designed for no detectable emissions, which have no external actuating mechanism in contact with process fluid, are required only to be monitored initially and annually.

(E) Valves designated as unsafe-to-monitor are required to be monitored only according to a written plan, which provides for their monitoring during safe-to-monitor times.

(F) Valves designated as difficult-to-monitor are required to be monitored only according to a written plan that provides for their monitoring at least once per year.

(7) Pressure relief devices in liquid service and connectors shall be operated in accordance with the standard at 61.242-8. This section provides, generally and in part:

(A) If a component presents visual, audible, or olfactory evidence of a leak, the leak shall be deemed repaired without monitoring if the visual, audible, or olfactory evidence has been eliminated.

(B) If there is visual, audible, or olfactory evidence of a leak at one of these components, and the leak is not repaired without monitoring, the component shall be monitored within 5 calendar days to confirm whether a leak is in fact present.

(8) Closed-vent systems and control devices used to comply with Section E.2 of this permit shall be operated in accordance with the standard at 61.242-11, as may be applicable. Operation of these systems in conformance with Sections D.14 or D.15 shall constitute compliance with these requirements.

(9) As an alternative to complying with E.2.1 (d)(6), above, valves may comply with the alternative standards for valves-allowable percentage of valves leaking under 61.243-1. This section provides, generally and in part:

(A) Upon 90 days’ advance notice to the Administrator, the designated process unit shall have no more than 2.0 percent leaking valves.

(B) All valves in the designated process unit shall be monitored initially upon designation, and annually thereafter, and

(C) The annual monitoring of all valves in the designated process unit shall be completed within one week.

(D) Valve leaks detected shall be repaired within 15 days, except if delay of repair applies, in accordance with 40 CFR 61.242-7(d) and (e).

(10) As an alternative to complying with the monitoring requirements in E.2.1 (d)(6), above, with respect to monitoring requirements alone, valves may comply with the alternative standards for valves-skip period leak detection and repair under 61.243-2. This section provides, generally and in part:

(A) All valves in the process unit shall comply initially with the monitoring requirements of E.2.1 (d)(6).

(B) After 2 consecutive quarterly monitoring periods with the percent leaking valves in the process unit at less than or equal to 2.0 percent, upon 90 days' advance notice to the Administrator, the designated process unit may begin to skip one of the quarterly monitoring periods.

(C) After 5 consecutive quarterly monitoring periods with the percent leaking valves in the process unit at less than or equal to 2.0 percent, upon notice to the Administrator, the designated process unit may begin to skip three of the quarterly monitoring periods.

(D) If for any monitoring period the percentage of leaking valves exceeds 2.0 percent, all valves in the process unit shall comply with the monitoring requirements of E.2.1 (d)(6), but may again elect to use this alternative.

(e) Any visible, audible, or olfactory leak containing VOHAP/VOC shall be considered a leak for purposes of the obligation to repair. If it is not clear whether the leak contains VOHAP/VOC, then Method 21 may be used to confirm whether a leak exists. For each component type, the relevant leak definition in E.2.2 (d) shall apply for this purpose. All leaks shall be marked as provided in 40 CFR 61.246(b) with a weatherproof and readily visible identification marked with the equipment identification number. This identification may be removed from the equipment after it has been successfully repaired, except that the identification on a leaking valve may not be removed until the valve has been monitored for 2 successive months without a leak being detected.

(f) The Permittee shall initiate repair of any leak no later than 5 calendar days after identification, and complete the repair within 15 days after identification, except where delay of repair is allowed under 40 CFR 61.242-10. This shall not affect repair periods under Condition E.2.1 (d)(3). 40 CFR 61.242-10 provides, generally and in part:

(A) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.

(B) Delay of repair of equipment for which leaks have been detected will be allowed for equipment that is isolated from the process and that does not remain in VOC/VOHAP service.

(C) Delay of repair for valves will be allowed if emissions immediate repair would result in greater emissions than delay of repair, and if purged material generated during the repair is collected and destroyed or recovered in a control device.

(D) Delay of repair for pumps will be allowed if the repair requires the use of a dual mechanical seal system, and is completed within 6 months.

(E) 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, but the supplies, although adequately stocked, have been depleted. Delay of repair beyond the second process unit shutdown is not allowed unless the second shutdown occurs sooner than 6 months after the first shutdown.

(g) Alternative means of emission limitations not already included in 40 CFR 61, Subpart V may be approved in accordance with 40 CFR 61.242-1(d) and 61.244

E.2.2 Exceptions to LDAR Standards for BCM Waste System Components

The following equipment types are not subject to the LDAR standards described in E.2.1:

(a) Research and development facilities, activities and equipment;

(b) Components on transportation equipment and containers such as tanker trucks, railroad cars, and drums (40 CFR 63.1256 and 40 CFR 63, Subpart DD);

(c) BCM process systems including non-waste storage and process operations (covered by Section E.1 of this permit);

(d) Utilities and non-process lines;

(e) Components in vacuum service (40 CFR 61.242-1);

(f) Equipment in VOC/VOHAP service that is in such service less than 300 hours per calendar year (40 CFR 63.680(c)(3)(iii)); and

(g) Closed loop heat exchange systems.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

E.2.3 Record Keeping and Reporting Requirements

(a) Records shall be kept in accordance with 61.246, including but not limited to:

(1) Identification of components that are subject to the rule with information indicating their method of compliance, with justifications and signatures as appropriate. No identification is required for welded fittings;

(2) For valves complying via the “skip period” alternative, a schedule for monitoring the valves and the percent valves found leaking during each monitoring period;

(3) Changes to each dual mechanical seal system design and operating criteria, including seal system failure criteria;

(4) List of equipment designated as unsafe to monitor/inspect or difficult to monitor/inspect, with the reason for the designation, and a copy of the plan for monitoring or inspecting such equipment;

(5) Records of leaks detected, repair information, and delays of repair;

(6) Records of compliance tests on equipment (compressors, pumps, or valves)

designated for no detectable emissions and for pressure relief devices in gas/vapor service;

(7) Records for closed-vent systems and control devices, subject to E.2.1 (d)(8);

(8) Records of information supporting designation that components are not in VOHAP/VOC service or are in vacuum service;

(9) Identification of components exempt because they are in VOC/VOHAP service for less than 300 hours per year;

(10) Records of alternative means of compliance determination; and

(11) Records may be kept in one or more recordkeeping systems, providing each record is identified by process unit.

(b) Reserved (Condition E.2.3(b) was deleted pursuant to Administrative Permit Amendment 157-20003-00006.)

(c) Reporting requirements shall be conducted in accordance with 61.247, including:

(1) LDAR Periodic Reports shall cover the periods from January 1 to June 30, and July 1 to December 31, respectively. Reports shall be submitted 30 days following the 6-month period. The report shall include any revisions to the information reported earlier if the method of compliance has changed since the last report. The report shall also contain the following information, divided and identified by process unit:

(A) For each month during the period covered by the report, the number of leaks detected for valves, pumps, and compressors and the number not repaired within 15 days, with the facts that explain any delay of repairs, and, where appropriate, why a process unit shutdown was technically infeasible;

(B) The results of all performance tests and monitoring to determine compliance with the alternative standards for valves at 40 CFR 61.243-1 and 61.243-2;

(C) Results of all monitoring and performance tests required to determine compliance with no detectable emissions; and

(D) The dates of process unit shutdowns which occurred during the reporting period.

Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12, 326 IAC 2-2]

E.2.4 Modifications and Construction: Advance Approval of Permit Conditions

(a) The Permittee may modify any existing emission units listed in this section of the permit without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the modified emission units are subject to the same applicable requirements listed in this E section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

(b) The Permittee may construct and install new emission units of the types described in this

D section without obtaining a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2), provided the new emission units are subject to the same applicable requirements listed in this E section, and the Permittee shall comply with the Change Management and Flexible Permit provisions in Section F.1 of this permit.

SECTION F.1 CHANGE MANAGEMENT AND FLEXIBLE PERMIT OPERATION CONDITIONS

Emissions Unit Description:

(a) The areas of the plant site listed below are subject to the change management and flexible permit conditions described in this F section. These conditions apply to all emission units listed in the specific sections of the permit listed below and emission units added to the site pursuant to the provisions of this section:

(1) D.6 BCM - Process Operations [referred to as “BCM”]
(2) D.7 BCM Support – Solvent Recovery Operations
(3) D.8 BCM Support – Individual Drain Systems
(4) D.9 BCM Support – Solvent Storage Tank Operations
(5) D.10 BCM Support – Waste Storage Tank Operations
(6) D.11 BCM Support – Waste Containers
(7) D.12 BCM Control Systems – T49 Liquid Waste Incinerator
(8) D.13 BCM Control Systems – T149 Solid-Liquid Waste Incinerator
(9) D.14 BCM Control Systems – RTO Operations
(10) D.15 BCM Control Systems – T79 Fume Incinerator Operations
(11) D.20 BCM Control Systems – Transfer Rack Operations

(b) The following operation is not subject to the change management provisions of this section except for the VOC emission limit requirements in Sections F.1.1(e) and F.1.7(c):

(1) D.18 BCM Support – Chemical Wastewater Treatment Plant

(c) The operations in the areas listed below are not subject to the change management and flexible permit conditions in this G section:

(1) D.1 Utilities
(2) D.2 Utilities Support
(3) D.3 – D.5 Fermented Products
(4) D.16 Research and Development Operations
(5) D.19 BCM Transfer Activities
(6) Insignificant Activities described in Section A and outside the BCM production and support operations

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

F.1.1 Emission Limits [326 IAC 2-2]

(a) Carbon monoxide (CO) emissions from the facilities operating under the flexible permit conditions shall not exceed 150 tons per 12-month period, rolled on a calendar month basis. Carbon monoxide emissions from the T79 fume incinerators shall not exceed 30 tons per 12-month period, rolled on a calendar month basis.

(b) Fluoride (F) emissions from the facilities operating under the flexible permit conditions shall not exceed 6 tons per 12-month period, rolled on a calendar month basis. Fluoride emissions from the T79 fume incinerators shall not exceed 2 tons per 12-month period, rolled on a calendar month basis.

(c) Nitrogen oxides (NOx) emissions from the facilities operating under the PAL permit conditions shall not exceed 300 tons per 12-month period, rolled on a calendar month basis. Nitrogen oxide emissions from the T79 fume incinerators shall not exceed 30 tons per 12-month period, rolled on a calendar month basis.

(d) Sulfur dioxide (SO_2) emissions from the facilities operating under the PAL permit conditions shall not exceed 300 tons per 12-month period, rolled on a calendar month basis. Sulfur dioxide emissions from the T79 fume incinerators shall not exceed 5 tons per 12-month period, rolled on a calendar month basis.

(e) Volatile organic compounds (VOC) emissions from the facilities operating under the flexible permit conditions shall not exceed 300 tons per 12-month period, rolled on a calendar month basis.

F.1.2 Site Modifications and Advance Approval of Modifications [326 IAC 2-7-5(9)] [326 IAC 2-7-5(16)]

The Permittee may make modifications described in subsection (a) below to the operations in Sections D.6 through D.15 and D.20 of this permit. If actual emissions do not exceed the limits in section F.1.1, and the Permittee complies with the other provisions of this section, then the Permittee is not required to obtain a source modification approval (otherwise required by 326 IAC 2-7-10.5), a Title V permit modification (otherwise required by 326 IAC 2-7-12), or a Prevention of Significant Deterioration permit (otherwise required by 326 IAC 2-2).

(a) Permitted modifications

The Permittee may implement changes, including but not limited to, the following modifications without triggering the administrative review processes described above:

(1) BCM Process Operations:

(A) A change in bulk pharmaceutical products, pharmaceutical intermediate products, miscellaneous organic chemicals, or synthetic organic chemicals manufactured;
(B) A change in raw materials stored and utilized;
(C) A change in the method of operation to a process or existing equipment;
(D) Piping changes, including but not limited to, process piping, waste piping and fume transport piping;
(E) A physical change to existing equipment;
(F) Reconstruction or replacement of existing equipment, including but not limited to, process tanks, crystallizers, distillation operations, filters, centrifuges, and dryers;
(G) Installation of new equipment, including but not limited to, process tanks, crystallizers, distillation operations, filters, centrifuges, and dryers;
(H) Reconstruction or replacement of existing production buildings;
(I) Construction of new production buildings and/or annexes; and

(2) BCM Support Operations:

(A) A change in solvent material recovered;
(B) A change in raw materials stored and utilized;
(C) A change in the method of operation to a process or existing equipment;
(D) Piping changes, including but not limited to, process piping, waste piping and fume transport piping;
(E) A physical change to existing equipment;
(F) Reconstruction or replacement of existing equipment, including but not limited to, process tanks, receivers, stills, storage tanks, and container transfer operations;
(G) Installation of new equipment, including but not limited to, process tanks,

receivers, stills, storage tanks, and container transfer operations;

(H) Reconstruction or replacement of existing solvent recovery operations, storage tanks, storage tank modules, and distillation operations;

(I) Installation of new solvent recovery operations, storage tanks, storage tank modules, and distillation operations; and

(3) T49 liquid waste incinerator and T149 solid-liquid waste incinerator:

(A) A change in waste materials disposed in the incinerators;

(B) A change in the use of portable containers, including but not limited to, drums, melons, and tank trailers;

(C) A change in the method of operation that does not affect compliance with 40 CFR Part 63 Subpart EEE;

(D) Piping changes;

(E) A physical change that does not affect compliance with 40 CFR Part 63 Subpart EEE;

(F) Reconstruction or replacement of incinerator components and support equipment, including but not limited to, cooling towers and waste container management; and

(G) Installation of new incinerator equipment components, support equipment or emission control equipment.

(b) Advance approval and applicable requirements

In addition to the emission limits identified in Condition F.1.1 of this permit, the emission limits and standards, compliance demonstration requirements, compliance monitoring requirements, record keeping requirements, reporting requirements, and other permit conditions applicable to the type of equipment or operation being modified, replaced, reconstructed or installed are described in Sections D.6 through D.15 of this permit. Each modification will be subject to the relevant provisions of those permit conditions. If a modification would cause an applicable requirement that is not described in this permit to apply, the Permittee must obtain a source modification approval if otherwise required by 326 IAC 2-7-10.5 and a Title V permit modification pursuant to 326 IAC 2-7-12.

Testing and Monitoring Requirements [326 IAC 2-7-6(1) (6)] [326 IAC 2-7-5(1)]

F.1.3 Carbon Monoxide (CO) Emission Limit Determination

The Permittee shall determine actual annual emissions by employing the following techniques:

(a) The following requirements apply to the RTOs, the T49 liquid waste incinerator, and the T149 solid-liquid waste incinerator:

(1) **CO measurement**: The Permittee shall measure CO concentration in the exhaust of with a CO continuous emission monitoring system (CEMS) that meets the requirements of 40 CFR Part 60, Appendix B and 326 IAC 3.

(2) **Flow rate measurement**: The Permittee shall measure the actual exhaust gas flow rate from the RTOs, T149 solid-liquid waste incinerator, and T49 liquid waste incinerator.

(3) **Mass emission calculation**: The Permittee shall calculate CO emissions, in tons, each calendar month by using the CEMS data and flow rate data.

(4) **Minimum data collection requirements:**

(A) For the RTOs, the Permittee shall monitor and record CO concentrations as required in Section D.14.

(B) For the T49 liquid waste incinerator, the Permittee shall monitor and record CO concentrations as required in Section D.12.

(C) For the T149 solid-liquid waste incinerator, the Permittee shall monitor and record CO concentrations as required in Section D.13.

(5) **Data substitution:**

(A) During periods of CEMS calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute CO concentration measurement obtained prior to the calibration in lieu of actual readings from the CO CEMS for the RTO and T149 CEMS, and the last valid one-minute CO emission rate measurement obtained prior to the calibration in lieu of actual readings from the CO CEMS for the T49 CEMS.

(B) During periods of flow meter calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute exhaust gas flow rate measurement obtained prior to the calibration in lieu of actual readings from the flow meter.

(C) During periods of CEMS maintenance, malfunction, repair, or other periods of invalid CO data collection, the Permittee shall substitute the following data in lieu of actual readings from the CO CEMS:

(i) When combusting only natural gas, the following CO mass emission rates shall be substituted:

(1) RTO CO mass emission rate = 0.05 lb/min
(2) T49 CO mass emission rate = 0.10 lb/min
(3) T149 CO mass emission rate = 0.07 lb/min

(ii) When incinerating a waste stream, the following CO concentrations shall be substituted:

(1) RTO CO concentration = 73 ppmv
(2) T49 CO concentration = 100 ppmv
(3) T149 CO concentration = 100 ppmv

(D) During periods of flow meter maintenance, malfunction, repair, or other periods of invalid exhaust gas flow rate data collection, the Permittee shall substitute the following data in lieu of actual readings from the flow meter:

(i) When combusting only natural gas, the following CO mass emission rates shall be substituted:

(1) RTO CO mass emission rate = 0.05 lb/min
(2) T49 CO mass emission rate = 0.10 lb/min
(3) T149 CO mass emission rate = 0.07 lb/min

(ii) When incinerating a waste stream, the following exhaust gas flow rates shall be substituted:

(1) RTO exhaust gas flow rate = 93,000 scfm

(2) T49 exhaust gas flow rate = 17,735 dscfm
(3) T149 exhaust gas flow rate = 14,340 dscfm

(6) **Emissions during RTO bypass periods**: When determining compliance with the CO emission limit, the Permittee shall include any known CO emissions from BCM production buildings not emitted through the RTO due to diversions at the fume transport system. The Permittee may use engineering calculation methods based on ideal gas law equations, stoichiometry, or mass balance, to estimate these emissions.

(b) The following requirements apply to the T79 fume incinerators (309 and 310):

(1) **Natural gas usage**: The Permittee shall determine the amount of natural gas burned by the T79 fume incinerators each calendar month.

(2) **Emission calculation**: The Permittee shall calculate CO emissions, in tons, each calendar month by multiplying the monthly natural gas usage, in mmscf, by an emission factor of 84 lbs/mmscf and converting the resulting emissions to tons.

(3) **Data substitution**: During periods of time when the Permittee is unable to determine natural gas usage because of auditing, calibration, maintenance, malfunction, repair, or other periods when the natural gas meters for the T79 fume incinerators are not collecting valid data, the Permittee shall substitute a natural gas consumption rate for each incinerator of 0.0075 mmscf/hour [based on the nominal heat input rate of 7.626 MMBtu/hr per incinerator].

F.1.4 Fluorides Emission Limit Determination

The Permittee shall determine actual annual emissions by employing the following techniques:

(a) The following requirements apply to the RTOs and the T79 fume incinerators:

(1) **Uncontrolled hydrogen fluoride emissions**: The Permittee shall determine the mass of fluorine atoms emitted to the RTOs and T79 fume incinerators [as components of fluorinated solvents] by BCM and BCM Support operations, by using engineering calculation methods based on ideal gas law equations, stoichiometry and mass balance. All fluorine atoms shall be considered emitted as hydrogen fluoride (HF) after combustion in the RTOs or the T79 fume incinerators.

(2) **HF control efficiency:** The Permittee shall base fluoride emissions on an RTO and T79 scrubber control efficiency of 98% or a control efficiency determined from an approved stack test. If the compliance monitoring data is not available or indicates the scrubbers are not achieving this control efficiency, the Permittee shall use a control efficiency of zero percent (0%).

(3) **Emission calculation**: The Permittee shall calculate fluoride emissions, in tons, for each calendar month by multiplying the amount of HF created by combustion of the fluorine atoms in the RTOs and T79 fume incinerators by the respective HF control efficiency.

(4) **Emissions during RTO bypass periods**: When determining compliance with the fluoride emission limit, the Permittee shall include any known fluoride emissions from BCM production buildings not emitted through the RTO due to diversions at the fume transport system. The Permittee may use engineering

calculation methods based on ideal gas law equations, stoichiometry, and mass balance, to estimate these emissions.

(b) The following requirements apply to the T49 liquid waste incinerator and the T149 solid-liquid waste incinerator:

(1) **Uncontrolled hydrogen fluoride emissions**: When burning liquid wastes, the Permittee shall determine the mass of fluorine atoms burned in the incinerators by sampling the liquid waste and analyzing the sample for fluorine content, no less frequently than once per quarter. All fluorine atoms shall be considered emitted as hydrogen fluoride (HF). When burning solid wastes in the T149 solid-liquid waste incinerator, the Permittee shall determine monthly HF emissions by multiplying an emission factor of 0.149 pounds/ton solid waste burned by the monthly solid waste throughput.

(2) **HF control efficiency:** The Permittee shall base fluoride emissions on an incinerator scrubber control efficiency of 98.0% or a control efficiency determined from an approved stack test. If the compliance monitoring data is not available or indicates the scrubbers are not achieving this control efficiency, the Permittee shall use a control efficiency of zero percent (0%).

(3) **Emission calculation**: The Permittee shall calculate fluoride emissions, in tons, for each calendar month by multiplying the amount of uncontrolled HF emissions by the HF control efficiency.

F.1.5 Nitrogen oxides (NO_X) Emission Limit Determination

The Permittee shall determine actual annual emissions by employing the following techniques:

(a) The following requirements apply to the RTOs, the T49 liquid waste incinerator, and the T149 solid-liquid waste incinerator:

(1) **NOx measurement**: The Permittee shall measure NOx concentration in the exhaust of with a NOx continuous emission monitoring system (CEMS) in accordance with the requirements of 40 CFR Part 60, Appendix B and 326 IAC 3.

(2) **Flow rate measurement**: The Permittee shall measure the actual exhaust gas flow rate from the RTOs, T149 solid-liquid waste incinerator, and T49 liquid waste incinerator with a system.

(3) **Emission calculation**: The Permittee shall calculate NOx emissions, in tons, each calendar month by using the CEMS data and flow rate data.

(4) **Data substitution:**

(A) During periods of CEMS calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute NOx concentration measurement obtained prior to the calibration in lieu of actual readings from the NOx CEMS for the RTO and T149 CEMS, and the last valid one-minute NOx emission rate measurement obtained prior to the calibration in lieu of actual readings from the NOx CEMS for the T49 CEMS.

(B) During periods of flow meter calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute exhaust gas flow rate measurement obtained prior to the calibration in lieu of actual readings from the flow meter.

(C) During periods of CEMS maintenance, malfunction, repair, or other periods of invalid NOx data collection, the Permittee shall substitute the following data in lieu of actual readings from the NOx CEMS:

(i) When combusting only natural gas, the following NOx mass emission rates shall be substituted:

(1) RTO NOx mass emission rate = 0.03 lb/min
(2) T49 NOx mass emission rate = 0.12 lb/min
(3) T149 NOx mass emission rate = 0.08 lb/min

(ii) When incinerating a waste stream, the following NOx concentrations shall be substituted:

(1) RTO NOx concentration = 91 ppmv
(2) T49 NOx concentration = 975 ppmvdc
(3) T149 NOx concentration = 170 ppmvdc

(D) During periods of flow meter maintenance, malfunction, repair, or other periods of invalid exhaust gas flow rate data collection, the Permittee shall substitute the following data in lieu of actual readings from the flow meter:

(i) When combusting only natural gas, the following NOx mass emission rates shall be substituted:

(1) RTO NOx mass emission rate = 0.03 lb/min
(2) T49 NOx mass emission rate = 0.12 lb/min
(3) T149 NOx mass emission rate = 0.08 lb/min

(ii) When incinerating a waste stream, the following exhaust gas flow rates shall be substituted:

(1) RTO exhaust gas flow rate = 93,000 scfm
(2) T49 exhaust gas flow rate = 17,735 dscfm
(3) T149 exhaust gas flow rate = 14,340 dscfm

(5) **Minimum data collection requirements:**

(A) For the RTOs, the Permittee shall monitor and record NOx concentrations as required in Section D.14.
(B) For the T49 liquid waste incinerator, the Permittee shall monitor and record NOx concentrations as required in Condition D.12.
(C) For the T149 solid-liquid waste incinerator, the Permittee shall monitor and record NOx concentrations as required in Section D.13.

(6) **Emissions during RTO bypass periods**: When determining compliance with the NOx emission limit, the Permittee shall include any known NOx emissions from BCM production buildings or storage tank modules not emitted through the RTO due to diversions in the fume transport system. The Permittee may use engineering calculation methods based on ideal gas law equations, stoichiometry, or mass balance to estimate these emissions.

(b) The following requirements apply to the T79 Fume Incinerators:

(1) **NOx emission calculation for natural gas usage:** The Permittee shall determine the amount of natural gas burned by the T79 Fume Incinerators each calendar month. The Permittee shall calculate NOx emissions from natural gas combustion, in tons, each calendar month by multiplying the monthly natural gas usage by an emission factor of 50 lbs/mmscf and converting the resulting emissions to tons.

(2) **NOx emission calculation for combustion of nitrogen-containing solvents**: The Permittee shall determine the mass of nitrogen atoms emitted to the T79 fume incinerators [as components of solvents containing nitrogen] by the BCM Support operations by using engineering calculations based on ideal gas law equations, stoichiometry, or mass balance. Six (6%) of the nitrogen atoms shall be considered emitted as nitrogen oxides after combustion in the T79 fume incinerators.

(3) **Data substitution:** During periods of time when the Permittee is unable to determine natural gas usage because of auditing, calibration, maintenance, malfunction, repair, or other periods when the natural gas meters for the T79 fume incinerators are not collecting valid data, the Permittee shall determine NOx emissions based on a natural gas consumption rate of 0.0075 mmscf/hour [based on the nominal heat input rate of 7.626 MMBtu/hr per incinerator].

F.1.6 Sulfur dioxide (SO_2) Emission Limit Determination

The Permittee shall determine actual annual emissions by employing the following techniques:

(a) The following requirements apply to RTOs, the T49 liquid waste incinerator, and the T149 solid-liquid waste incinerator:

(1) **SO_2 measurement**: The Permittee shall measure SO_2 concentration in the exhaust of RTO, and incinerators with a SO_2 continuous emission monitoring system (CEMS) that meets the requirements of 40 CFR Part 60, Appendix B and 326 IAC 3.

(2) **Flow rate measurement**: The Permittee shall measure the actual exhaust gas flow rate from the RTO, T149 solid-liquid waste incinerator, and T49 liquid waste incinerator.

(3) **Emission calculation**: The Permittee shall calculate SO_2 emissions, in tons, each calendar month by using the CEMS data and flow rate data.

(4) **Data substitution:**

(A) During periods of CEMS calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute SO_2 concentration measurement obtained prior to the calibration in lieu of actual readings from the SO_2 CEMS for the RTO and T149 CEMS, and the last valid one-minute SO_2 emission rate measurement obtained prior to the calibration in lieu of actual readings from the SO_2 CEMS for the T49 CEMS.

(B) During periods of flow meter calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute exhaust gas flow rate measurement obtained prior to the calibration in lieu of actual readings from the flow meter.

(C) During periods of CEMS maintenance, malfunction, repair, or other periods of invalid SO_2 data collection, the Permittee shall substitute the following data in lieu of actual readings from the SO_2 CEMS:

(i) When combusting only natural gas, the following SO_2 mass emission rates shall be substituted:

(1) RTO SO_2 mass emission rate = 0.0004 lb/min
(2) T49 SO_2 mass emission rate = 0.0007 lb/min
(3) T149 SO_2 mass emission rate = 0.0005 lb/min

(ii) When incinerating a waste stream, the following SO_2 concentrations shall be substituted:

(1) RTO SO_2 concentration = 100 ppmv
(2) T49 SO_2 Concentration = 500 ppmv
(3) T149 SO_2 concentration = 400 ppmv

(D) During periods of flow meter maintenance, malfunction, repair, or other periods of invalid exhaust gas flow rate data collection, the Permittee shall substitute the following data in lieu of actual readings from the flow meter:

(i) When combusting only natural gas, the following SO_2 mass emission rates shall be substituted:

(1) RTO SO_2 mass emission rate = 0.0004 lb/min
(2) T49 SO_2 mass emission rate = 0.0007 lb/min
(3) T149 SO_2 mass emission rate = 0.0005 lb/min

(ii) When incinerating a waste stream, the following exhaust gas flow rates shall be substituted:

(1) RTO exhaust gas flow rate = 93,000 scfm
(2) T49 exhaust gas flow rate = 17,735 dscfm
(3) T149 exhaust gas flow rate = 14,340 dscfm

(5) **Minimum data collection requirements:**

(A) For the RTOs, the Permittee shall monitor and record SO_2 concentrations as required in Section D.14.
(B) For the T49 liquid waste incinerator, the Permittee shall monitor and record SO_2 concentrations as required in Condition D.12.
(C) For the T149 solid-liquid waste incinerator, the Permittee shall monitor and record SO_2 concentrations as required in Condition D.13.

(6) **Emissions during RTO bypass periods:** When determining compliance with the SO_2 emission limit, the Permittee shall include any known SO_2 emissions from BCM production buildings and storage tank modules not emitted through the RTO due to diversions in the fume transport system. The Permittee may use engineering calculation methods based on ideal gas law equations, stoichiometry, or mass balance to estimate these emissions.

(b) The following requirements apply to the T79 fume incinerators:

(1) **SO_2 emission calculation for natural gas usage:** The Permittee shall determine the amount of natural gas burned by the T79 fume incinerators each calendar month. The Permittee shall calculate SO_2 emissions from natural gas

combustion, in tons, each calendar month by multiplying the monthly natural gas usage by an emission factor of 0.6 lbs/mmscf and converting the resulting emissions to tons.

(2) **Uncontrolled SO_2 emission calculation for combustion of sulfur-containing solvents:** The Permittee shall determine the mass of sulfur atoms emitted to the T79 fume incinerators [as components of solvents containing sulfur] by the BCM Support operations by using engineering calculation methods based on ideal gas law equations, stoichiometry, or mass balance. All of the sulfur atoms shall be considered converted to SO_2 as a result of combustion in the T79 fume incinerators.

(3) **SO_2 control efficiency:** The Permittee shall base SO_2 emissions on T79 scrubber control efficiency of 95%. If the compliance monitoring data is not available or indicates the scrubbers are not achieving this control efficiency, the Permittee shall use a control efficiency of zero percent (0%).

(4) **Emission calculation:** The Permittee shall calculate SO_2 emissions, in tons, each calendar month by multiplying the amount of SO_2 created by combustion of the sulfur atoms in the T79 fume incinerators by the scrubber SO_2 control efficiency.

(5) **Data substitution:** During periods of time when the Permittee is unable to determine natural gas usage because of auditing, calibration, maintenance, malfunction, repair, or other periods when the natural gas meters for the T79 fume incinerators are not collecting data properly, the Permittee shall determine SO_2 emissions based on a natural gas consumption rate of 0.0075 mmscf/hour [based on the nominal heat input rate of 7.626 MMBtu/hr per incinerator].

F.1.7 Volatile Organic Compound (VOC) Emission Limit Determination

The Permittee shall determine actual annual emissions by employing the following techniques:

(a) The following requirements apply to the RTOs when compliance is based on the 20 ppmv alternative standard, the T49 liquid waste incinerator, and the T149 solid-liquid waste incinerator:

(1) **VOC measurement:**

(A) For the RTO operations, the Permittee shall directly measure TOC concentration, as methane**,** in the exhaust gas using a TOC continuous emission monitoring system (CEMS) that meets the requirements of 40 CFR Part 63. The Permittee shall assume VOC, a subset of total organic compounds (TOC), is equal to TOC.

(B) For the T49 liquid waste incinerator and the T149 solid-liquid waste incinerator, the Permittee shall use 10 ppmdvc methane or shall use the highest hourly rolling average HC level achieved during the DRE test runs as the TOC concentration in the exhaust gas, as long as the CO concentration, as measured by the CO CEMS, is less than 100 ppmvdc, averaged over a rolling hourly period. VOC, a subset of total organic compounds (TOC), shall be equal to TOC.

(2) **Flow rate measurement:** The Permittee shall measure the actual exhaust gas flow rate from the RTOs, T149 solid-liquid waste incinerator, and T49 liquid waste incinerator.

(3) **Emission calculation**: The Permittee shall calculate VOC emissions, in tons, each calendar month by using the TOC CEMS concentration data, measured as methane (MW = 16), and exhaust gas flow rate data.

(4) **Data substitution:**

(A) During periods of CEMS calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute TOC/CO concentration measurement obtained prior to the calibration in lieu of actual readings from the TOC/CO CEMS.

(B) During periods of flow meter calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute exhaust gas flow rate measurement obtained prior to the calibration in lieu of actual readings from the flow meter.

(C) During periods of CEMS maintenance, malfunction, repair, or other periods of invalid TOC/CO data collection, the Permittee shall substitute the following data in lieu of actual readings from the TOC/CO CEMS:

(i) When combusting only natural gas, the following VOC mass emission rates shall be substituted:

(1) RTO VOC mass emission rate = 0.003 lb/min
(2) T49 VOC mass emission rate = 0.007 lb/min
(3) T149 VOC mass emission rate = 0.004 lb/min

(ii) When incinerating a waste stream, the following TOC concentrations shall be substituted:

(1) RTO TOC concentration = 20 ppmv methane
(2) T49 TOC concentration = 10 ppmv methane
(3) T149 TOC concentration = 10 ppmv methane

(D) During periods of flow meter maintenance, malfunction, repair, or other periods of invalid exhaust gas flow rate data collection, the Permittee shall substitute the following data in lieu of actual readings from the flow meter:

(i) When combusting only natural gas, the following VOC mass emission rates shall be substituted:

(1) RTO VOC mass emission rate = 0.003 lb/min
(2) T49 VOC mass emission rate = 0.007 lb/min
(3) T149 VOC mass emission rate = 0.004 lb/min

(ii) When incinerating a waste stream, the following exhaust gas flow rates shall be substituted:

(1) RTO exhaust gas flow rate = 93,000 scfm
(2) T49 exhaust gas flow rate = 17,735 dscfm
(3) T149 exhaust gas flow rate = 14,340 dscfm

(5) **Minimum data collection requirements:**

(A) For the RTOs, the Permittee shall monitor and record VOC concentrations as required in condition D.14.

(B) For the T49 liquid waste incinerator, the Permittee shall monitor and record VOC concentrations as required in condition D.12.

(C) For the T149 solid-liquid waste incinerator, the Permittee shall monitor and record VOC concentrations as required in D.13.

(6) **Emissions during RTO bypass periods:** The Permittee shall include any known VOC emissions from BCM production buildings not emitted through the RTO due to diversions in the fume transport system. The Permittee may use engineering calculation methods based on ideal gas law equations, stoichiometry, or mass balance to estimate these emissions.

(b) The following requirements apply to the RTOs when compliance is based on the 98% control efficiency standard and the T79 fume incinerators:

(1) **VOC emission calculation for natural gas usage:** The Permittee shall determine the amount of natural gas burned by the RTOs and the T79 fume incinerators each calendar month. The Permittee shall calculate VOC emissions from natural gas combustion, in tons, each calendar month by multiplying the monthly natural gas usage by an emission factor of 5.5 lbs/mmscf and converting the resulting emissions to tons.

(2) **VOC emission calculation from BCM production operations and BCM support operations exhausting to the RTOs and the T79 fume incinerator system:** The Permittee shall estimate the uncontrolled VOC emissions from the BCM production operations and the BCM support operations exhausting to the RTOs and the T79 fume incinerator system by using engineering calculation methods based on ideal gas law equations, stoichiometry, or mass balance. The Permittee shall base VOC emissions on an RTO and T79 fume incinerator control efficiency of 98%. If the compliance monitoring data is not available or indicates the RTO or T79 fume incinerator is not achieving this control efficiency, the Permittee shall use a control efficiency of zero percent (0%).

(3) **Data substitution:** During periods of time when the Permittee is unable to determine natural gas usage because of auditing, calibration, maintenance, malfunction, repair, or other periods when the natural gas meters for the RTOs or T79 fume incinerator system are not collecting valid data, the Permittee may assume that natural gas is consumed at a rate of 0.0075 mmscf/hour [based on the nominal heat input rate of 7.626 MMBtu/hr per incinerator].

(c) Fugitive VOC emissions from BCM and BCM Support Operations, *including the Chemical Wastewater Treatment Plant*: The Permittee shall determine monthly fugitive VOC emissions using the following calculation methods:

(1) **Emission factors:** The Permittee shall develop emission factors to calculate monthly fugitive VOC emissions. The emission factors shall be developed according to the following methods.

(A) For each VOC compound that the Permittee reports release of in the annual SARA Title III TRI report (“reportable SARA VOCs”), the Permittee shall develop a compound-specific emission factor, expressed in pounds of emissions per 100 pounds of solvent usage. Reportable SARA VOC emission factors shall be derived from mass-balance data used to submit SARA reports. Each compound-specific fugitive emission factor for reportable SARA VOCs shall be updated and applied to monthly fugitive emission calculations beginning July 1 of each year.

(B) For VOC compounds not reported under SARA Title III, the Permittee shall use a generic fugitive emission factor, expressed in pounds of emissions per 100 pounds of solvent usage. The generic fugitive emission factor shall be equal to the highest representative emission factor developed in (A) above for a reportable SARA VOC used as a raw material in production processes. In the alternative, the Permittee may develop and apply a compound-specific emission factor for a compound not reported under SARA Title III. The generic fugitive emission factor and any compound-specific fugitive emission factor shall be updated and applied to monthly fugitive emission calculations beginning July 1 of each year.

(2) **Emission calculation method:** For VOCs with a compound-specific emission factor described in (1), the Permittee shall calculate monthly fugitive VOC emissions by multiplying the compound-specific emission factor by the corresponding compound-specific monthly solvent usage. For VOCs without a compound-specific emission factor, the Permittee shall calculate monthly fugitive VOC emissions by multiplying the generic emission factor described in (1)(B) by the monthly solvent usage of those compounds.

Record keeping and reporting [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

F.1.8 Record Keeping and Reporting of Emission Limits [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

(a) The Permittee shall record and maintain records of all information including all measurements and calculations described in Sections F.1.3 through F.1.7.

(b) The Permittee shall submit a quarterly report of actual emissions of CO, fluorides, NOx, SO_2, and VOC, as determined in accordance with Sections F.1.3 through F.1.7, to the address listed in Section C – General Reporting Requirements, within thirty (30) days after the end of the calendar quarter being reported. This report requires the certification by a “responsible official” as defined by 326 IAC 2-7-1(34).

F.1.9 Change Management Evaluation Process

For purposes of the requirements of the Pharmaceutical MACT standards [40 CFR Part 63 Subpart GGG], the Permittee shall employ a change management evaluation process to determine whether changes will affect compliance. This change evaluation process shall include the following elements:

(a) New processes, process changes, and physical changes to process equipment that increase hazardous air pollutant emissions from process vents, wastewater streams, and storage tanks will be considered “new process operating scenarios”. Changes which affect fugitive emissions equipment components will not be considered new operating scenarios and will be managed per the relevant provisions of the leak detection and repair program, which includes provisions addressing the addition of, and changes to, components.

(b) Each new process operating scenario [as defined in F.1.10 (a)] will be reviewed to determine whether the change will affect compliance with the emission standards under the Pharmaceutical MACT requirements. Compliance with the following standards will be evaluated: process vent standards [40 CFR 63.1254]; storage tank standards [40 CFR 63.1253]; and wastewater streams [40 CFR 63.1256].

(c) Documentation of the evaluation of each new process operating scenario will contain the following information:

(1) For new or changed process vents, a statement regarding the method for complying with 40 CFR 63.1254. The statement shall include an analysis that shows whether the new or changed process vents fit within an existing compliance demonstration, or whether another demonstration must be conducted.

(2) For new or changed storage tanks, a statement regarding the method for complying with 40 CFR 63.1253. The statement shall include an analysis that shows whether the new or changed storage tank fits within an existing compliance demonstration, or whether another demonstration must be conducted.

(3) For new or changed wastewater streams, a statement regarding the method for complying with 40 CFR 63.1256. The statement shall include an analysis that shows whether the new or changed wastewater stream fits within an existing compliance demonstration, or whether another demonstration must be conducted.

(d) If a new process-operating scenario will trigger applicable requirements not described in this permit or compliance with applicable requirements will be demonstrated by methodologies not described in this permit, this permit must be revised pursuant to 326 IAC 2-7-12.

F.1.10 Record Keeping and Reporting of Site Modifications [326 IAC 2-7-5(16)] [326 IAC 2-7-20(a)] [40 CFR 63.1259] [40 CFR 63.1260]

(a) Changes made pursuant to advance approval provisions:

The Permittee shall record and maintain records of all modifications that would have otherwise required a revision to this permit pursuant to 326 IAC 2-7-12 or a source modification approval if the provisions of 326 IAC 2-7-10.5 were applicable.

(b) Pharmaceutical MACT operating scenarios:

(1) Pursuant to 40 CFR 63.1259(c), for all equipment subject to the pharmaceutical MACT requirements, the Permittee shall develop a record describing operating scenarios that may occur in the BCM operations and BCM Support operations.

(2) Pursuant to 40 CFR 63.1259(f)(4), for all equipment subject to the pharmaceutical MACT requirements, the Permittee shall list all known operating scenarios that may occur in the BCM operations and BCM Support operations in the notification of compliance status report.

(3) Pursuant to 40 CFR 63.1259(b)(8), for all equipment subject to the pharmaceutical MACT requirements, the Permittee shall maintain a log that records, which operating scenarios have been, put into effect in the BCM operations and BCM Support operations.

F.1.11 Notifications for Site Modifications [326 IAC 2-1.1-12(e)-(f)]

(a) The Permittee shall submit a notification for any modification that would have otherwise required a source modification approval if the provisions of 326 IAC 2-7-10.5 were applicable, to the address listed in Section C – General Reporting Requirements, at least ten (10) days before implementing the modification.

(b) The notification shall include the following information:

(1) the company name and address and source and permit identification numbers;

(2) a description of the physical or operational change, including an estimate of the potential to emit of the emissions associated with the change;

(3) an identification of the emission unit or units being changed on the layout diagram of the source;

(4) the schedule for constructing each physical change and implementing each operational change;

(5) identification of any applicable requirements that are applicable to the physical or operational change and include any monitoring, record keeping, or reporting requirements to assure compliance with the applicable requirements;

(6) a statement for all regulated pollutants, except the pollutant for which the emissions limit has been established, that demonstrates that the physical or operational change will not trigger any federal or state permitting requirement for any regulated pollutant; and

(7) a statement that the physical or operational change will not result in emissions greater than the emissions limit.

(c) This notification does not require the certification by a “responsible official” as defined by 326 IAC 2-7-1(34).

F.1.12 Inclusion of Site Modifications in Pharmaceutical MACT Periodic Report

(a) Pursuant to 40 CFR 63.1260(g)(2)(vii), the Permittee shall include in the Periodic Report information for each new operating scenario operated since the time period covered by the last periodic report. These reports shall be submitted as required in Conditions D.14.10 or D.15.8 – Reporting Requirements.

(b) Pursuant to 40 CFR 63.1260(h)(1), whenever a new process is introduced, or a change in any of the information submitted in the Notification of Compliance Status Report, the Permittee shall submit the following information with the next Periodic report as required in Conditions D.14.9 or D.15.8 – Reporting Requirements:

(1) A brief description of the process change;

(2) A description of any modifications to standard procedures or quality assurance procedures;

(3) Revisions to any of the information reported in the original Notification of Compliance Status Report under paragraph (f) of this section; and

(4) Information required by the Notification of Compliance Status Report under paragraph (f) of this section for changes involving the addition of processes or equipment.

(c) Pursuant to 40 CFR 63.1260(h)(2), the Permittee must submit a report 60 days before the scheduled implementation date of either of the following:

(1) Any change in the activity covered by the Precompliance report.

(2) A change in the status of a control device from small to large.

F.1.13 Reports of Changes Affected by Hazardous Waste Combustor MACT

(a) Pursuant to 40 CFR 63.1206(b)(5)(iii), a change is defined as any change in design, operation or maintenance practices that were documented in the comprehensive performance test plan, Notification of Compliance, or startup, shutdown, and malfunction plan.

(b) For changes that may adversely affect compliance which are not monitored with a CEMS, the Permittee shall:

(1) Notify the Administrator at least 60 days prior to the change, unless circumstances are documented that dictate that such prior notice is not reasonably feasible.

(2) Conduct a comprehensive performance test under the requirements of 40 CFR 63.1207(f)(1) and (g)(1) to document compliance with the affected emission standard(s) and establish operating parameter limits as required under 40 CFR 63.1209, and submit the Administrator a Notification of Compliance under 40 CFR 63.1207(j) and 40 CFR 63.1210(d); and

(3) Not burn hazardous waste for more than a total of 720 hours after such change is made and prior to submitting the notification of compliance unless the Administrator provides a written approval to burn hazardous waste in the interim.

(c) For changes that will not affect compliance, the Permittee shall document the change in the operating record upon making such change. The Permittee shall revise as necessary the performance test plan, Documentation of Compliance, Notification of Compliance, and startup, shutdown and malfunction plan to reflect these changes.

Other flexible permit requirements

F.1.14 Valid Period for Best Available Control Technology [326 IAC 2-2-3(4)]

The modifications that occur under this permit qualify as a single, ongoing phase of construction and modification to Evonik Corporation. The BACT requirements established in Sections D.6 through D.15 shall remain valid over the entire period of this permit. If the time between consecutive modifications exceeds 18 months, the Permittee shall demonstrate that the initial BACT determination incorporated into the permit is still valid or propose new BACT requirements. Upon expiration of this permit, Major New Source Review requirements (Prevention of Significant Deterioration and Nonattainment NSR) shall apply.

F.1.15 Emission Increases from Increased Utilization of Ancillary Equipment [326 IAC 2-2] (Deleted)

Condition F.1.15 was deleted pursuant to Administrative Permit Amendment 157-20003-00006.

F.1.16 NSPS and NESHAP Pre-Construction Notification and Reviews

The provisions of this permit do not relieve the Permittee of the notification and pre-construction approval requirements found in 40 CFR 60.7, 40 CFR 61.07, 40 CFR 61.08, and 40 CFR 63.5. If the Permittee constructs, reconstructs, or modifies an affected facility in a manner that requires notification or pre-construction approval under 40 CFR 60.7, 40 CFR 61.07, 40 CFR 61.08, or 40 CFR 63.5, the Permittee shall comply with those requirements.

SECTION G.1 PLANTWIDE APPLICABILITY LIMITATIONS REQUIREMENTS

Emissions Unit Description [326 IAC 2-7-5(15)]:

The entire plant site is subject to the plantwide applicability limitations [PAL] requirements described in this G section.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

G.1.1 Source Wide Emission Limits [326 IAC 2-2.4-7(1)]

(a) Nitrogen oxides (NOx) emissions from the entire source shall not exceed 648 tons per 12 consecutive month period with compliance determined at the end of each month. This provision does not supersede any other NOx emission limits contained in this permit.

(b) Sulfur dioxide (SO_2) emissions from the entire source shall not exceed 2059 tons per 12-consecutive month period, with compliance determined at the end of each month. This provision does not supersede any other SO_2 emission limits contained in this permit.

General PAL requirements [326 IAC 2-2.4-1]

G.1.2 Major New Source Review Applicability [326 IAC 2-2.4-1(c)]

Any physical change in or change in the method of operation of this source is not a major modification for NOx or SO_2, and not subject to the review requirements of 326 IAC 2-2 provided the actual emissions of NOx and SO_2 from the entire source do not exceed the emission limits in Condition G.1.1 of this permit. This provision does not supersede or affect the Flexible Permit requirements in Section F of this permit.

G.1.3 General PAL Requirements [326 IAC 2-2.4-7, 326 IAC 2-2.4-8, 326 IAC 2-2.4-9, 326 IAC 2-2.4-10, 326 IAC 2-2.4-11, 326 IAC 2-2.4-15]

(a) The requirements of this section G become effective on the issuance date of the PAL permit, and expire ten years after the issuance date of the PAL permit.

(b) If the Permittee applies to renew this PAL at least six months prior to expiration of the PAL, but no earlier than eighteen months prior to the expiration of the PAL, then notwithstanding the expiration date in subsection G.1.3(a), the PAL shall continue to be effective until the revised permit with the renewed PAL is issued. The application must contain the elements described in 326 IAC 2-2.4-3 and 326 IAC 2-2.4-10.

(c) Once this PAL expires, if not otherwise renewed, then the requirements of 326 IAC 2-2.4-9 are applicable.

(d) The requirements for renewing this PAL are described in 326 IAC 2-2.4-10.

(e) The requirements for increasing the emissions limits described in Condition G.1.1 are described in 326 IAC 2-2.4-11.

(f) The requirements applicable to terminating or revoking this PAL are described in 326 IAC 2-2.4-15.

Testing and Monitoring Requirements [326 IAC 2-2.4-7(6) & (7), 326 IAC 2-2.4-12]

G.1.4 Nitrogen Oxides (NO_X) Emission Limit Determination [326 IAC 2-2.4-7(6) & (7), 326 IAC 2-2.4-12]

The Permittee shall determine actual annual emissions of NOx by employing the following techniques:

(a) Reserved.

(b) The Permittee shall calculate NOx emissions from burning natural gas in Boilers 4 and 5, in tons, each calendar month, by multiplying the amount of natural gas burned in each calendar month by an NOx emission factor of 280 lb NOx/million cubic feet of natural gas burned in Boiler 4 and 100 lb NOx/million cubic feet of natural gas burned in Boiler 5.

(c) The Permittee shall calculate NOx emissions from burning fuel oil in Boilers 4 and 5, in tons, each calendar month, by multiplying the amount of fuel oil burned in each calendar month by an NOx emission factor of 24 lb NOx/1000 gallons of fuel oil burned in Boiler 4 and 20 lb NOx/1000 gallons of fuel oil burned in Boiler 5.

(d) The Permittee shall determine NOx emissions from diesel and gasoline stationary engines, in tons, each calendar month, through one of the methods described in (1) and (2) below. The Permittee shall identify which method it used when it reports emissions pursuant to Condition G.1.8.

(1) **Potential to emit method**: The Permittee shall use the following values, which represent the NOx potential to emit of the diesel engines, as the actual emissions:

(A) For the T121 1,676 HP diesel electrical generator – 1.1 ton/month [12.99 ton/yr].

(B) For the T5 380 HP diesel emergency generator – 0.2 ton/month [2.9 ton/yr]

(C) For the T62 1,475 HP diesel emergency generator – 0.7 ton/month [8.9 ton/yr].

(D) For the T135 390 HP diesel emergency generator – 0.3 ton/month [3.0 ton/yr].

(E) For the T126 Server Room 402 HP diesel emergency generator – 0.3 ton/month [3.12 ton/yr].

(F) For the T70 402 HP diesel emergency generator – 0.3 ton/month [3.12 ton/yr].

(G) For the T26-GEN-7500A 201 HP-diesel emergency generator – 0.1 ton/month [1.56 ton/yr].

(H) For the T26-COMP-5600A 125 HP diesel emergency air compressor – 0.1 ton/month [0.97 ton/yr].

(I) For the T62 300 HP diesel emergency air compressor – 0.2 ton/month [2.33 ton/yr].

(J) For the T149 11 HP gasoline emergency engine – 0.002 ton/month [0.03 ton/yr].

(2) **Actual hours of operation method:** The Permittee shall calculate NOx emissions from diesel engines by multiplying the actual hours of operation per calendar month for each diesel engine by the engine's horsepower rating and by a NOx emission factor of 0.024 lb NOx/brake horsepower-hour for diesel engines greater than 600 brake horse power, 0.031 lb NOx/brake horsepower-hour for diesel engines smaller than 600 brake horse power and 0.11 lb NOx/brake horsepower-hour for gasoline engines.

(e) The Permittee shall calculate NOx emissions from the T174 Thermal Research Incinerator, in tons, each calendar month, by multiplying the actual hours of operation of the incinerator for each month by a NOx emission factor of 2.5 lb NOx/hour of operation.

(f) The methods for determining monthly NOx emissions from the T49 liquid waste incinerator, T149 solid-liquid waste incinerator, RTOs, and T79 Fume Incinerators are described in Condition F.1.5 of this permit.

(g) NOx emissions from building T171 are equivalent to the potential to emit for this facility – 0.1 ton/yr.

(h) When determining actual annual emissions of NOx, the Permittee shall include emissions occurring as a result of startups, shutdown, and malfunctions.

(i) The Permittee shall determine NOx emissions from boilers 4001 and 4002, in tons, each calendar month, using CEMS data from Condition D.1.11 and using the following method to determine NOx emission limits in Condition D.20.4: NOx emissions in lbs = lbs NOx/MMBTU * fuel usage(scf for natural gas, and gallons for fuel oil) * Heat content per unit of fuel used. A value of 1000 BTU/scf of natural gas shall be used if heat content data for the natural gas is unavailable. If data is not available for calculating the NOx emissions, the following substitution value shall be used: 32.0 lbs NOx/Hour. This value represents the maximum potential emissions of each boiler.

G.1.5 Sulfur Dioxides (SO_2) Emission Limit Determination [326 IAC 2-2.4-7(6) & (7), 326 IAC 2-2.4-12]

The Permittee shall determine actual annual emissions of SO_2 by employing the following techniques:

(a) Reserved.

(b) The Permittee shall calculate SO_2 emissions from burning natural gas in Boilers 4 and 5, in tons, each calendar month, by multiplying the amount of natural gas burned in each calendar month by an SO_2 emission factor of 0.6 lb SO_2/million cubic feet of natural gas burned.

(c) The Permittee shall calculate SO_2 emissions from burning fuel oil in Boilers 4 and 5, in tons, each calendar month, by multiplying the amount of fuel oil burned in each calendar month by an SO_2 emission factor of 69.6 lb SO_2/1000 gallons of fuel oil burned.

(d) The Permittee shall determine SO_2 emissions from diesel and gasoline stationary engines, in tons, each calendar month, through one of the methods described in (1) and (2) below. The Permittee shall identify which method it used when it reports emissions pursuant to Condition G.1.8.

(1) **Potential to emit method**: The Permittee shall use the following values, which represent the SO_2 potential to emit of the diesel engines, as the actual emissions:

(A) For the T121 1,676 HP diesel electrical generator – 0.1 ton/month [0.86 ton/yr].

(B) For the T5 380 HP diesel emergency generator – 0.02 ton/month [0.2 ton/yr]

(C) For the T62 1,475 HP diesel emergency generator – 0.1 ton/month [1.5 ton/yr].

(D) For the T135 390 HP diesel emergency generator – 0.02 ton/month [0.2 ton/yr].

(E) For the T126 Server Room 402 HP diesel emergency generator – 0.02 ton/month [0.21 ton/yr].

(F) For the T70 402 HP diesel emergency generator – 0.02 ton/month [0.21 ton/yr].

(G) For the T26-GEN-7500A 201 HP diesel emergency generator – 0.01 ton/month [0.10 ton/yr].

(H) For the T26-COMP-5600A 125 HP diesel emergency air compressor – 0.01 ton/month [0.06 ton/yr].

(I) For the T62 300 HP diesel emergency air compressor – 0.01 ton/month [0.15 ton/yr].

(J) For the T149 11 HP gasoline emergency engine – 0.0001 ton/month [0.002 ton/yr].

(2) **Actual hours of operation method:** The Permittee shall calculate SO_2 emissions from diesel engines by multiplying the actual hours of operation per calendar month for each diesel engine by the engine's horsepower rating and by an SO_2 emission factor of 0.0004045 lb SO_2/brake horsepower-hour for diesel engines greater than 600 brake horse power and 0.00205 lb SO_2/brake horsepower-hour for diesel engines smaller than 600 brake horse power

(e) The Permittee shall calculate SO_2 emissions from the T174 Thermal Research Incinerator, in tons, each calendar month, by multiplying the actual hours of operation of the incinerator for each month by a SO_2 emission factor of 4.56 lb SO_2/hour of operation.

(f) The methods for determining monthly SO_2 emissions from the T49 liquid waste incinerator, T149 solid-liquid waste incinerator, RTOs, and T79 Fume Incinerators are described in Condition F.1.6 of this permit.

(g) SO_2 emissions from building T171 are equivalent to the potential to emit for this facility – 1.5 ton/yr [0.125 ton/month].

(h) When determining actual annual emissions of SO_2, the Permittee shall include emissions occurring as a result of startups, shutdown, and malfunctions.

(i) The Permittee shall calculate SO_2 emissions from burning natural gas in boilers 4001 and 4002, in tons, each calendar month by multiplying the amount of natural gas burned in each calendar month by an SO_2 emission factor of 0.6 lb SO_2/million cubic feet of natural gas burned.

(j) The Permittee shall calculate SO_2 emissions from burning fuel oil in boilers 4001 and 4002, in tons, each calendar month, by multiplying the amount of fuel oil burned in each calendar month by an SO_2 emission factor of 42.6 lb SO_2/1000 gallons of fuel oil burned.

G.1.6 Revalidation of Emissions Determination Methods [326 IAC 2-2.4-12(i)]

The Permittee shall revalidate the emissions determination methods described in Conditions G.1.4 and G.1.5 through performance testing or other scientifically valid means approved by the department no later than five years after the effective date of the PAL provisions.

Record keeping and reporting [326 IAC 2-7-5(3), 326 IAC 2-7-19]

G.1.7 Record Keeping Requirements [326 IAC 2-7-5(3), 326 IAC 2-2.4-13]

(a) The Permittee shall retain a copy of all records necessary to determine compliance with the requirements of this G Section, including a determination of each emissions unit's twelve (12) month rolling total emissions, for five years from the date of the record.

(b) The Permittee shall retain a copy of the PAL permit application, any applications for revisions to the PAL, each annual compliance certification as required by Condition B.9 of this permit, and data relied on in the certification for the duration of the PAL plus five years.

G.1.8 Reporting Requirements [326 IAC 2-7-5(3), 326 IAC 2-2.4-14]

(a) The Permittee shall submit a semi-annual report, containing the information described below, to the address listed in Section C – General Reporting Requirements, within thirty (30) days after the end of the calendar quarter being reported. This report requires the certification by a "responsible official" as defined by 326 IAC 2-7-1(34). The report shall include the following information:

(1) The identification of the owner and operator of the facility and the permit number.

(2) Total emissions of NOx and SO_2, in tons per rolling 12 month period for each month in the reporting period, as determined by Conditions G.1.4 and G.1.5.

(3) All data relied upon, including but not limited to, any quality assurance or quality control data, in determining emissions.

(4) A list of any emissions units modified or added to the major stationary source during the reporting period.

(5) If not previously reported pursuant to another condition in this permit, the number, duration, and cause of any deviations or monitoring malfunctions, other than the time associated with zero and span calibration checks, and any corrective action taken.

(6) If not required to be reported pursuant to another condition in this permit, information about monitoring system shutdowns including the following information:

(A) Notification to the department of the shutdown of any monitoring system.

(B) Whether the shutdown was permanent or temporary.

(C) The reason for the shutdown.

(D) The anticipated date that the monitoring system will be fully operational or replaced with another monitoring system.

(E) Whether the emissions unit monitored by the monitoring system continued to operate.

(F) If the emission unit monitored by the monitoring system continued to operate, the calculation of the:

(i) Emissions of the pollutant; or

(ii) Number determined by method included in the permit, as provided by 326 IAC 2-2.4-12(g).

(b) The procedures for reporting deviations from the requirements of this Section G, and the procedures for reporting emissions in excess of the limits described in Condition G.1.1 are described in Condition B.14. A report that describes emissions exceeding the PAL limits shall include the quantity of emissions emitted by the source. This term satisfies the requirements of 326 IAC 2-2.4-14(c).

(c) The Permittee shall submit to the department the results of any revalidation test or method within three months of completion of the test or method. These results do not require responsible official certification.

SECTION H.1 SYNTHETIC ORGANIC CHEMICAL MANUFACTURING REQUIREMENTS

Emissions Unit Description:

The emission units listed below may function as chemical manufacturing process units, as defined in 40 CFR 63.101, if they manufacture as a primary product one or more of the chemicals listed in Table 1 of 40 CFR part 63 Subpart F, and/or Tetrahydrobenzaldehyde (CAS Number 100–50–5), and/or Crotonaldehyde (CAS Number 123–73–9), but do not use as a reactant or manufacture as a product, or co-product, one or more of the organic hazardous air pollutants listed in table 2 of 40 CFR part 63 subpart F.

Source ID	Equipment Description	Stack/Vent ID	Nominal Capacity	Control Device
Building T27:				
T27-TK3001	Process Tank	RTO	200 gal	RTO
T27-TK3002	Process Tank	RTO	200 gal	RTO
T27-TK3101	Process Tank	RTO	1000 gal	RTO
T27-TK3102	Process Tank	RTO	1000 gal	RTO
T27-TK3103	Process Tank	RTO	1000 gal	RTO
T27-TK3104	Process Tank	RTO	1000 gal	RTO
T27-TK3105	Process Tank	RTO	1000 gal	RTO
T27-TK3201	Process Tank	RTO	1000 gal	RTO
T27-TK3202	Process Tank	RTO	1000 gal	RTO
T27-TK3203	Process Tank	RTO	1000 gal	RTO
T27-TK3204	Process Tank	RTO	1000 gal	RTO
T27-TK3205	Process Tank	RTO	1000 gal	RTO
T27-TK3207	Process Tank	RTO	350 gal	RTO
T27-TK3301	Process Tank	RTO	2000 gal	RTO
T27-TK3302	Process Tank	RTO	2000 gal	RTO
T27-TK3303	Process Tank	RTO	2000 gal	RTO
T27-TK3304	Process Tank	RTO	2000 gal	RTO
T27-TK3305	Process Tank	RTO	500 gal	RTO
T27-TK3401	Process Tank	RTO	750 gal	RTO
T27-TK3402	Process Tank	RTO	750 gal	RTO
T27-TK3404	Process Tank	RTO	750 gal	RTO
T27-TK3405	Process Tank	RTO	750 gal	RTO
T27-TK3406	Process Tank	RTO	750 gal	RTO
T27-TK3407	Process Tank	RTO	1000 gal	RTO
T27-TK3408	Process Tank	RTO	350 gal	RTO
T27-TK3501	Process Tank	RTO	2000 gal	RTO
T27-TK3502	Process Tank	RTO	2000 gal	RTO
T27-TK3503	Process Tank	RTO	2000 gal	RTO
T27-TK3504	Process Tank	RTO	2000 gal	RTO
T27-TK3505	Process Tank	RTO	500 gal	RTO
T27-TK3506	Process Tank	RTO	2000 gal	RTO
T27-TK3601	Process Tank	RTO	2000 gal	RTO
T27-TK3602	Process Tank	RTO	1000 gal	RTO

	T27-TK3603	Process Tank	RTO	2000 gal	RTO	
	T27-TK3605	Process Tank	RTO	500 gal	RTO	
	T27-TK3606	Process Tank	RTO	2000 gal	RTO	
	T27-TK3607	Process Tank	RTO	500 gal	RTO	
	T27-TK3803	Process Tank	RTO	1000 gal	RTO	
	T27-TK4001	Process Tank	RTO	2000 gal	RTO	
	T27-TK4002	Process Tank	RTO	2000 gal	RTO	
	T27-TK4004	Process Tank	RTO	1000 gal	RTO	
	T27-TK4005	Process Tank	RTO	1500 gal	RTO	
	T27-TK4006	Process Tank	RTO	2000 gal	RTO	
	T27-TK4006A	Process Tank	RTO	2000 gal	RTO	
	T27-TK4007	Process Tank	RTO	2000 gal	RTO	
	T27-TK4007A	Process Tank	RTO	2000 gal	RTO	
	T27-TK4008	Process Tank	RTO	2000 gal	RTO	
	T27-TK4009	Process Tank	RTO	1000 gal	RTO	
	T27-TK4010	Process Tank	RTO	1000 gal	RTO	
	T27-TK4011	Process Tank	RTO	1000 gal	RTO	
	T27-TK4013	Process Tank	RTO	750 gal	RTO	
	T27-TK4014	Process Tank	RTO	300 gal	RTO	
	T27-TK4031	Process Tank	RTO	500 gal	RTO	
	T27-TK4101	Process Tank	RTO	750 gal	RTO	
	T27-TK4103	Process Tank	RTO	500 gal	RTO	
	T27-TK4104	Process Tank	RTO	500 gal	RTO	
	T27-TK4105	Process Tank	RTO	1000 gal	RTO	
	T27-TK4203	Process Tank	RTO	500 gal	RTO	
	T27-TK4205	Process Tank	RTO	1000 gal	RTO	
	T27-TK4301	Process Tank	RTO	750 gal	RTO	
	T27-TK4302	Process Tank	RTO	500 gal	RTO	
	T27-TK4401	Process Tank	RTO	2000 gal	RTO	
	T27-TK4404	Process Tank	RTO	2000 gal	RTO	
	T27-TK4502	Process Tank	RTO	1000 gal	RTO	
	T27-TK4601	Process Tank	RTO	1000 gal	RTO	
	T27-TK4603	Process Tank	RTO	75 gal	RTO	
	T27-TK4605	Process Tank	RTO	1000 gal	RTO	
	T27-TK4701	Process Tank	RTO	1000 gal	RTO	
	T27-TK4801A	Process Tank	RTO	1000 gal	RTO	
	T27-TK4802A	Process Tank	RTO	100 gal	RTO	
	T27-TK4803A	Process Tank	RTO	500 gal	RTO	
	T27-TK4901	Process Tank	RTO	200 gal	RTO	
	T27-TK4906	Process Tank	RTO	75 gal	RTO	
	T27-TK5004	Process Tank	RTO	500 gal	RTO	
	T27-TK371-A	Process Tank	RTO	50 gal	RTO	
	T27-TK372-A	Process Tank	RTO	500 gal	RTO	
	T27-TK372-B	Process Tank	RTO	100 gal	RTO	
	T27-CENT30	Centrifuge	RTO	NA	RTO	
	T27-CENT38	Centrifuge	RTO	NA	RTO	
	T27-CENT42	Centrifuge	RTO	NA	RTO	
	T27-RVD53-1	Rotary Vacuum Dryer	RTO	NA	RTO	

	T27-FD3702A	Filter Dryer	RTO	793 gal	RTO	
	Building T29:					
	T29-CENT1401	Heinkel Centrifuge	RTO	140 gal	RTO	
	T29-CENT2401	Heinkel Centrifuge	RTO	140 gal	RTO	
	T29-CENT3401	Heinkel Centrifuge	RTO	140 gal	RTO	
	T29-CD1501	Cone Dryer	RTO	2,640 gal	RTO	
	T29-FD8501	Filter Dryer	RTO	42 gal	RTO	
	T29-FD-8503	Filter Dryer	RTO	175 gal	RTO	
	T29-FD2502	Filter Dryer	RTO	70 gal	RTO	
	T29-CD3501	Cone Dryer	RTO	2,640 gal	RTO	
	T29-IBC8251	Process Tank	RTO	150 gal	RTO	
	T29-IBC8253	Process Tank	RTO	150 gal	RTO	
	T29-IBC8254	Process Tank	RTO	150 gal	RTO	
	T29-IBC8257	Process Tank	RTO	150 gal	RTO	
	T29-IBC8259	Process Tank	RTO	150 gal	RTO	
	T29-SFH1121	Process Tank	RTO	NA	RTO	
	T29-SFH3121	Process Tank	RTO	NA	RTO	
	T29- REAC1201	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 1202	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 1203	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 1204	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 1205	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 2201	Process Tank	RTO	1600 gal	RTO	
	T29- REAC 2202	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 2203	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 2204	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 2205	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 3201	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 3202	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 3203	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 3204	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 3205	Process Tank	RTO	2000 gal	RTO	
	T29- REAC 4201	Process Tank	RTO	2,000 gal	RTO	
	T29- REAC 4202	Process Tank	RTO	500 gal	RTO	
	T29- REAC 4203	Process Tank	RTO	2000 gal	RTO	
	T29-TK7920	Process Tank	RTO	200 gal	RTO	
	T29-TK7921	Process Tank	RTO	80 gal	RTO	
	T29-TK7922	Process Tank	RTO	200 gal	RTO	
	T29-TK8123	Process Tank	RTO	200 gal	RTO	
	T29-TK8211	Process Tank	RTO	100 gal	RTO	
	T29-TK8212	Process Tank	RTO	100 gal	RTO	
	T29-TK8213	Process Tank	RTO	100 gal	RTO	
	T29-TK8214	Process Tank	RTO	100 gal	RTO	
	T29-TK8216	Accumulator Tank	RTO	50 gal	RTO	
	T29-TK8217	Accumulator Tank	RTO	50 gal	RTO	
	T29-TK8218	Accumulator Tank	RTO	50 gal	RTO	
	T29-TK8220	Accumulator Tank	RTO	50 gal	RTO	

T29-TK8256	Process Tank	RTO	150 gal	RTO
T29-TK8219	Accumulator Tank	RTO	50 gal	RTO
T29-TK2502M	Accumulator Tank	RTO	100 gal	RTO
T29-TK1401	Accumulator Tank	RTO	50 gal	RTO
T29-TK2401	Accumulator Tank	RTO	50 gal	RTO
T29-TK3401	Accumulator Tank	RTO	50 gal	RTO
Building T31:				
T31-CENT	Centrifuge	RTO	98 gal	RTO
T31-FD803	Filter Dryer	RTO	50 gal	RTO
T31-TK601	Process Tank	RTO	500 gal	RTO
T31-TK602	Process Tank	RTO	500 gal	RTO
T31-TK603	Process Tank	RTO	500 gal	RTO
T31-TK604	Process Tank	RTO	500 gal	RTO
T31-TK611	Process Tank	RTO	500 gal	RTO
T31-TK611DT01	Process Tank	RTO	50 gal	RTO
T31-TK612	Process Tank	RTO	500 gal	RTO
T31-TK613	Process Tank	RTO	500 gal	RTO
T31-TK614	Process Tank	RTO	500 gal	RTO
T31-TK631	Process Tank	RTO	300 gal	RTO
T31-TK641	Process Tank	RTO	100 gal	RTO
T31-TK643	Process Tank	**	100 gal	T79 or RTO**
Building T31A:				
T31A-CENT985	Centrifuge	RTO	N/A	RTO
T31A-FD861	Filter Dryer	RTO	50 gal	RTO
T31A-FD874	Filter Dryer	RTO	50 gal	RTO
T31A-TK61	Process Tank	RTO	50 gal	RTO
T31A-TK63	Process Tank	RTO	100 gal	RTO
T31A-TK64	Process Tank	RTO	50 gal	RTO
T31A-TK621	Process Tank	RTO	300 gal	RTO
T31A-TK622	Process Tank	RTO	800 gal	RTO
T31A-TK651	Process Tank	RTO	450 gal	RTO
T31A-TK661	Process Tank	RTO	300 gal	RTO
T31A-TK681	Process Tank	RTO	500 gal	RTO
T31A-TK682	Process Tank	RTO	500 gal	RTO
T31A-TK683	Process Tank	RTO	500 gal	RTO
T31A-TK684	Process Tank	RTO	500 gal	RTO
T31A-TK691	Process Tank	RTO	500 gal	RTO
T31A-TK692	Process Tank	RTO	500 gal	RTO
T31A-TK693	Process Tank	RTO	500 gal	RTO
T31A-TK694	Process Tank	RTO	500 gal	RTO
Building T99:				
T99-ED42	Heinkel Centrifuge	RTO	NA	RTO
T99-PD43	Pan Dryer	RTO	793 gal	RTO
T99-PD44	Pan Dryer	RTO	793 gal	RTO
T99-RVD1	Rotary Vacuum Dryer	RTO	1200 gal	RTO

T99-RVD2	Rotary Vacuum Dryer	RTO	1200 gal	RTO
T99-RVD3	Rotary Vacuum Dryer	RTO	1200 gal	RTO
T99-RVD5	Rotary Vacuum Dryer	RTO	1200 gal	RTO
T99-RVD6	Rotary Vacuum Dryer	RTO	1200 gal	RTO
T99-RVD7	Rotary Vacuum Dryer	RTO	1200 gal	RTO
T99-RVD8	Rotary Vacuum Dryer	RTO	1200 gal	RTO
T99-TK-D9	Process Tank	RTO	449 gal	RTO
T99-FD-D9*	Filter Dryer	RTO	NA	RTO
T99-TK-D-9D*	Portable Tank	RTO	155 gal	RTO
T99-TK-D41	Process Tank	RTO	300 gal	RTO
T99-TK-D42	Process Tank	RTO	150 gal	RTO
Building T100:				
T100-CENT60	Centrifuge	RTO	N/A	RTO
T100-CENT61	Centrifuge	RTO	N/A	RTO
T100-CENT62	Centrifuge	RTO	N/A	RTO
T100-CENT63	Centrifuge	RTO	N/A	RTO
T100-CENT64	Centrifuge	RTO	N/A	RTO
T100-CENT65	Centrifuge	RTO	N/A	RTO
T100-CENT66	Centrifuge	RTO	N/A	RTO
T100-CENT67	Centrifuge	RTO	N/A	RTO
T100-CENT68	Centrifuge	RTO	N/A	RTO
T100-CENT69	Centrifuge	RTO	N/A	RTO
T100-CENT70	Centrifuge	RTO	N/A	RTO
T100-TK1	Process Tank	RTO	2000 gal	RTO
T100-TK2	Process Tank	RTO	4000 gal	RTO
T100-TK3	Process Tank	RTO	2000 gal	RTO
T100-TK4	Process Tank	RTO	2000 gal	RTO
T100-TK5	Process Tank	RTO	2000 gal	RTO
T100-TK5A*	Accumulator Tank	RTO	50 gal	RTO
T100-TK6	Process Tank	RTO	2000 gal	RTO
T100-TK7	Process Tank	RTO	4000 gal	RTO
T100-TK8	Process Tank	RTO	4000 gal	RTO
T100-TK8C	Process Tank	RTO	30 gal	RTO
T100-TK9	Process Tank	RTO	4000 gal	RTO
T100-TK10	Process Tank	RTO	4000 gal	RTO
T100-TK11	Process Tank	RTO	4000 gal	RTO
T100-TK12	Process Tank	RTO	4000 gal	RTO
T100-TK13	Process Tank	RTO	3300 Gal	RTO
T100-TK14	Process Tank	RTO	4000 gal	RTO
T100-TK15	Process Tank	RTO	2000 gal	RTO
T100-TK16	Process Tank	RTO	2000 gal	RTO
T100-TK17	Process Tank	RTO	2000 gal	RTO
T100-TK18	Process Tank	RTO	2000 gal	RTO
T100-TK18A*	Distillate Tank	RTO	200 gal	RTO
T100-TK18B*	Charge Tank	RTO	60 gal	RTO
T100-TK20	Process Tank	RTO	4000 gal	RTO
T100-TK21	Process Tank	RTO	4000 gal	RTO

T100-TK22	Process Tank	RTO	2000 gal	RTO
T100-TK24	Process Tank	RTO	4000 gal	RTO
T100-TK24D*	Distillate Tank	RTO	50 gal	RTO
T100-TK25	Process Tank	RTO	4000 gal	RTO
T100-TK26	Process Tank	RTO	4000 gal	RTO
T100-TK27	Process Tank	RTO	4000 gal	RTO
T100-TK28	Process Tank	RTO	4000 gal	RTO
T100-TK29	Process Tank	RTO	4000 gal	RTO
T100-TK30	Process Tank	RTO	4000 gal	RTO
T100-TK-30A	Process Tank	RTO	70 gal	RTO
T100-TK31	Process Tank	RTO	4000 gal	RTO
T100-TK31B	Process Tank	RTO	50 gal	RTO
T100-TK32	Process Tank	RTO	4000 gal	RTO
T100-TK33	Process Tank	RTO	1000 gal	RTO
T100-TK34	Process Tank	RTO	1000 gal	RTO
T100-TK35	Process Tank	RTO	1000 gal	RTO
T100-TK36	Process Tank	RTO	1000 gal	RTO
T100-TK37	Process Tank	RTO	1000 gal	RTO
T100-TK38	Process Tank	RTO	1000 gal	RTO
T100-TK40	Portable Process Tank	RTO	100 gal	RTO
T100	Portable Process Tank	RTO	N/A	RTO
T100-PTK1	Portable Cleaning Tank	RTO	150 gal	RTO
T100-TK14A	Accumulator Tank	RTO	50 gal	RTO
T100-TK21A	Accumulator Tank	RTO	50 gal	RTO
T100-TK39	CIP Tank	RTO	500 gal	RTO
Spare Equipment (not associated with a single building)				
T27-CENT 16	Centrifuge	***	NA	***
T27-CENT 19	Centrifuge	***	NA	***
T27-CENT 37	Centrifuge	***	NA	***
T27-CENT 40	Centrifuge	***	NA	***
T28-CENT15	Centrifuge	***	NA	***
T31-CENT504	Centrifuge	***	13 gal	***
T31-RVD T47733	Rotary Vacuum Dryer	**	37 gal	***
T31A-TK65	Portable Process Tank	**	100 gal	***
T31A-TK8252	Portable Process Tank	**	150 gal	***

* Emission units marked with an asterisk are insignificant activities as defined by 326 IAC 2-7-1(21).
** This equipment is currently not in service; however, this equipment shall be tied into either the RTO control system or the T79 control system upon startup.
*** Spare equipment may be used anywhere on the plant site. If the equipment is used in T27, T31, T31A, T99, or T100, it will be vented to the RTO as required by Section D.6 of the permit. If the equipment is used in the T171 area, it will be vented to the atmosphere as allowed by Section D.16 of the permit.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Applicability of National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry (SOCMI Rule) [40 CFR part 63 subpart F]

H.1.1 Compliance Demonstration Requirements [40 CFR 63.103(e)]

The Permittee shall meet one of the following requirements:

(a) Retain information, data, and analysis used to determine that the chemical manufacturing process unit does not use as a reactant or manufacture as a product or co-product any organic hazardous air pollutant. Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

(b) When requested by the Administrator, demonstrate that the chemical manufacturing process unit does not use as a reactant or manufacture as a product or co-product any organic hazardous air pollutant.

H.1.2 Modifications and Construction: Advance Approval of Permit Conditions

The emission units described in this H section are not subject to the advance approval permit conditions.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
PART 70 OPERATING PERMIT
CERTIFICATION

Source Name: Evonik Corporation
Source Address: 1650 Lilly Road, Lafayette, Indiana 47909
Part 70 Permit No.: T157-33448-00006

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify)

☐ Report (specify)

☐ Notification (specify)

☐ Affidavit (specify)

☐ Other (specify)

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
Signature:
Printed Name:
Title/Position:
Phone:
Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

COMPLIANCE AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name: Evonik Corporation
Source Address: 1650 Lilly Road, Lafayette, Indiana 47909
Part 70 Permit No.: T157-33448-00006

This form consists of 2 pages **Page 1 of 2**

☐ This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by:_______________________________

Title / Position: ________________________________

Date:____

Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

Section D.1 – Utilities Operations
Quarterly Fuel Oil Characteristic and Consumption Report

Source Name: Evonik Corporation
Source Address: 1650 Lilly Road, Lafayette, IN 47909-9201
Part 70 Permit No.: T157-33448-00006
Facility: Boilers 4 and 5
Parameter: SO_2 emissions
Limit: 0.5 lbs/MMBtu

Quarter: ________________ **Year:** ______________

Month	Sulfur Content (% Wt.)	Heating Value (Btu/lb)	Fuel Oil Consumption (gallons)	Emission Rate (lbs/MMBtu)
Boiler 4:				
Boiler 5:				

Check one of the following:

☐ No deviation occurred in this quarter.

☐ The following deviation/s occurred in this quarter.

Submitted by: ______________________________

Title / Position: ______________________________

Signature: ______________________________

Date: ______________________________

Phone: ______________________________

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

Section D.12-D.15 – Control Device CMS Operations
Streamlined CMS Periodic Report

Source Name: Evonik Corporation
Source Address: 1650 Lilly Road, Lafayette, IN 47909-9201
Part 70 Permit No.: T157-33448-00006
Quarter: _________________ **Year:** ______________

PART 1: CMS Exceedance Summary

Regulated Entity	CMS	Brief Description	Limits/UOM	Manufacturer/ Model #	Last Audit/ Annual Calibration Date	Description of changes in CMS/CEMS

PART 2: CMS Downtime Summary

Regulated Entity	Operating Time (days)	CMS	Exceedance Time by Cause (days)					Total Exceedance Time (days)	Exceedances (as % of Operating Time)
			Startup/ Shutdown	Control Equipment Problem	Process Problem	Other known	Other Unknown		

PART 3: CMS Downtime Details, If Applicable

Control Device: ________________________
CMS/CEMS: ________________________
Operating Time: ________________________

Start Date	Start Time	End Date	End Time	Downtime Type	SSM (yes/no)	Nature and Cause of Malfunction	Nature of Repairs or Adjustment/ Corrective Actions/ Preventive Measures

Control Device: ________________________
CMS/CEMS: ________________________
Operating Time: ________________________

Start Date	Start Time	End Date	End Time	Downtime Type	SSM (yes/no)	Nature and Cause of Malfunction	Nature of Repairs or Adjustment/ Corrective Actions/ Preventive Measures

Control Device: ________________________
CMS/CEMS: ________________________
Operating Time: ________________________

Start Date	Start Time	End Date	End Time	Downtime Type	SSM (yes/no)	Nature and Cause of Malfunction	Nature of Repairs or Adjustment/ Corrective Actions/ Preventive Measures

PART 4: CMS Excursion Summary, If Applicable

Regulated Entity	Operating Time (days)	CMS	Number of Excursions	% Excursion

PART 5: CMS Excursion Details, If Applicable

Control Device: ________________________
CMS/CEMS: ________________________
Operating Time: ________________________

Date	Duration (days)

PART 6: Bypass Summary

Regulated Entity	Date	Start Time	Building or Fume Stream	Duration (hrs)	SSM Event?

PART 7: SSM Summary

REGULATED SOURCE	DATE	DURATION (hours)	SSM EVENT TYPE	SSM PLAN FOLLOWED?	NOTES

Submitted by: ______________________________

Title / Position: ______________________________

Signature: ______________________________

Date: ______________________________

Phone: ______________________________

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Section E – Leak Detection and Repair (LDAR) Program
Streamlined LDAR Periodic Report

Source Name: Evonik Corporation
Source Address: 1650 Lilly Road, Lafayette, IN 47909-9201
Part 70 Permit No.: T157-33448-00006

Period: _________________ **Year:** ______________

PART 1: LDAR Report for Process System Components

Process Unit:
Equipment Type:
Service

Monitoring Period	Number Tested	Number Leakers	Percent Leakers

Process Unit Shutdown Periods

Number of Components	Number Added	Number Removed

Process Unit:
Equipment Type:
Service

Monitoring Period	Number Tested	Number Leakers	Percent Leakers

Process Unit Shutdown Periods

Number of Components	Number Added	Number Removed

PART 2: LDAR Report for Waste Components

Process Unit:
Equipment Type:
Service

Monitoring Period	Number Tested	Number Leakers	Percent Leakers

Process Unit Shutdown Periods

Number of Components	Number Added	Number Removed

Process Unit:
Equipment Type:
Service

Monitoring Period	Number Tested	Number Leakers	Percent Leakers

Process Unit Shutdown Periods

Number of Components	Number Added	Number Removed

Submitted by: ____________________

Title / Position: ____________________

Signature: ____________________

Date: ____________________

Phone: ____________________

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Evonik Corporation
Source Address: 1650 Lilly Road, Lafayette, IN 47909-9201
Part 70 Permit No.: T157-33448-00006
Facility: Boilers 4001 and 4002
Parameter: CO
Limit: 98 tons/12 months

Quarter:________________ YEAR:__________

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ______________________________

Submitted by: ______________________________

Title / Position: ______________________________

Signature: ______________________________

Date: ______________________________

Phone: ______________________________

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Evonik Corporation
Source Address: 1650 Lilly Road, Lafayette, IN 47909-9201
Part 70 Permit No.: T157-33448-00006
Facility: Boiler 4001
Parameter: Very low sulfur oil and hours fuel oil burned
Limit: Less than 976,740 gallons/year = < 10% annual capacity for fuel oil

Quarter:________________ YEAR:__________

Quarter	Column 1 This Quarter		Column 2 Year Total		Column 3 (Column 1 + Column 2) Year Total		Annual Capacity for fuel oil
	No. of gallons	No. of hours	No. of gallons	No. of hours	No. of gallons	No. of hours	
Quarter 1 January-March			0.0	0.0			
Quarter 2 April-June							
Quarter 3 July-September							
Quarter 4 October-December							

The boiler's maximum capacity to burn fuel oil is 9,767,400 gallons.
Annual Capacity = No. of gallons of fuel oil burned up to date for the year /9,767,400 gallons

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ____________________________

Submitted by: ____________________________

Title / Position: ____________________________

Signature: ____________________________

Date: ____________________________

Phone: ____________________________

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Evonik Corporation
Source Address: 1650 Lilly Road, Lafayette, IN 47909-9201
Part 70 Permit No.: T157-33448-00006
Facility: Boiler 4002
Parameter: Very low sulfur oil and hours fuel oil burned
Limit: Less than 976,740 gallons/year = < 10% annual capacity for fuel oil
Quarter:________________ YEAR:__________

Quarter	Column 1 This Quarter		Column 2 Year Total		Column 3 (Column 1 + Column 2) Year Total		Annual Capacity
	No. of gallons	No. of hours	No. of gallons	No. of hours	No. of gallons	No. of hours	
Quarter 1 January-March			0.0	0.0			
Quarter 2 April-June							
Quarter 3 July-September							
Quarter 4 October-December							

The boiler's maximum capacity to burn fuel oil is 9,767,400 gallons.
Annual Capacity = No. of gallons of fuel oil burned up to date for the year /9,767,400 gallons

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ______________________________

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Annual Report

Source Name:	Evonik Corporation
Source Address:	1650 Lilly Road, Lafayette, IN 47909-9201
Part 70 Permit No.:	T157-33448-00006
Facility:	Emergency Air Compressor (T26-COMP 5600A)
Parameter:	Hour of operation
Limit:	500 Hours/year

YEAR: _____________

Hours of Operation

☐ No deviation occurred in quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ______________________________

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Evonik Corporation
Source Address: 1650 Lilly Road, Lafayette, Indiana 47909
Part 70 Permit No.: T157-33448-00006

Months: ________ to __________ Year: ___________

Page 1 of 2

This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C-General Reporting. Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".	
◻ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
◻ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Page 2 of 2

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed by:_______________________________

Title / Position: ___________________________________

Date:____

Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

Sections F.1 and G.1 – Change Management and Flexible Permit Requirements, and Plantwide Applicability Limitations Requirements
Quarterly Emission Limit Report

Source Name: Evonik Corporation
Source Address: 1650 Lilly Road, Lafayette, IN 47909-9201
Part 70 Permit No.: T157-33448-00006
Facility: BCM Operations (RTOs, T79, T49, T149, BCM Building Fugitives)
Parameter: BCM Operations Emission Limit for VOC, CO, and Fluorides;
T79 Fume Incinerator System Emission Sublimit for VOC
Limit:

Pollutant	BCM Operations (tons/yr)	T79 Fume Incinerator (tons/yr)
VOC	300	300
CO	150	30
Fluorides	6	2

Facility: Source wide
Parameter: Plantwide Emission Limits for NOx, and SO_2;
PAL Limit:

Pollutant	(Tons/yr)
NOx	648
SO_2	2,059

The attached spreadsheet provides the monthly actual emissions for the BCM operations and PAL NOx and SO_2 limits. The information is used to determine compliance with the emission limits provided above. This emission summary report was:

Submitted by: ____________________

Title / Position: ____________________

Signature: ____________________

Date: ____________________

Phone: ____________________

Source Name: Evonik Corporation
Source Address: 1650 Lilly Road, Lafayette, IN 47909-9201
Part 70 Permit No.: T157-33448-00006

Quarter: Year: Pollutant	Actual Emission Estimates, tons								
	Month 1	Previous 11 Months	12-month Total	Month 2	Previous 11 Months	12-month Total	Month 3	Previous 11 Months	12-month total
RTOs									
VOC, Point									
CO									
NOx									
SO_2									
Fluorides									
T79 Fume Incinerator System									
VOC, Point									
CO									
NOx									
SO_2									
Fluorides									
T49 Liquid Waste Incinerator									
VOC, Point									
CO									
NOx									
SO_2									
Fluorides									
T149 Solid-Liquid Waste Incinerator									
VOC, Point									
CO									
NOx									
SO_2									
Fluorides									
BCM Building Operations									
VOC, Fugitive									
BCM Total									
VOC (Point+ Fugitive)									
CO									
NOx									
SO_2									
Fluorides									
Boilers									

Quarter: Year: Pollutant	Actual Emission Estimates, tons								
	Month 1	Previous 11 Months	12-month Total	Month 2	Previous 11 Months	12-month Total	Month 3	Previous 11 Months	12-month total
NOx									
SO_2									
Foul Air Incinerator									
NOx									
SO_2									
Reciprocating Engines									
NOx									
SO_2									
Site Total PAL Limits									
NOx									
SO_2									

Submitted by: ______________________________

Title / Position: ______________________________

Signature: ______________________________

Date: ______________________________

Phone: ______________________________

Attachment A

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart Db—Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

SOURCE: 72 FR 32742, June 13, 2007, unless otherwise noted.

What This Subpart Covers

§ 60.40b Applicability and delegation of authority.

(a) The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)).

(b) Any affected facility meeting the applicability requirements under paragraph (a) of this section and commencing construction, modification, or reconstruction after June 19, 1984, but on or before June 19, 1986, is subject to the following standards:

(1) Coal-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 MMBtu/hr), inclusive, are subject to the particulate matter (PM) and nitrogen oxides (NO_x) standards under this subpart.

(2) Coal-fired affected facilities having a heat input capacity greater than 73 MW (250 MMBtu/hr) and meeting the applicability requirements under subpart D (Standards of performance for fossil-fuel-fired steam generators; § 60.40) are subject to the PM and NO_x standards under this subpart and to the sulfur dioxide (SO_2) standards under subpart D (§ 60.43).

(3) Oil-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 MMBtu/hr), inclusive, are subject to the NO_x standards under this subpart.

(4) Oil-fired affected facilities having a heat input capacity greater than 73 MW (250 MMBtu/hr) and meeting the applicability requirements under subpart D (Standards of performance for fossil-fuel-fired steam generators; § 60.40) are also subject to the NO_x standards under this subpart and the PM and SO_2 standards under subpart D (§ 60.42 and § 60.43).

(c) Affected facilities that also meet the applicability requirements under subpart J or subpart Ja of this part are subject to the PM and NO_x standards under this subpart and the SO_2 standards under subpart J or subpart Ja of this part, as applicable.

(d) Affected facilities that also meet the applicability requirements under subpart E (Standards of performance for incinerators; § 60.50) are subject to the NO_x and PM standards under this subpart.

(e) Steam generating units meeting the applicability requirements under subpart Da (Standards of performance for electric utility steam generating units; § 60.40Da) are not subject to this subpart.

(f) Any change to an existing steam generating unit for the sole purpose of combusting gases containing total reduced sulfur (TRS) as defined under § 60.281 is not considered a modification under § 60.14 and the steam generating unit is not subject to this subpart.

(g) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, the following authorities shall be retained by the Administrator and not transferred to a State.

(1) Section 60.44b(f).

(2) Section 60.44b(g).

(3) Section 60.49b(a)(4).

(h) Any affected facility that meets the applicability requirements and is subject to subpart Ea, subpart Eb, subpart AAAA, or subpart CCCC of this part is not subject to this subpart.

(i) Affected facilities (*i.e.,* heat recovery steam generators) that are associated with stationary combustion turbines and that meet the applicability requirements of subpart KKKK of this part are not subject to this subpart. This subpart will continue to apply to all other affected facilities (*i.e.* heat recovery steam generators with duct burners) that are capable of combusting more than 29 MW (100 MMBtu/h) heat input of fossil fuel. If the affected facility (*i.e.* heat recovery steam generator) is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The stationary combustion turbine emissions are subject to subpart GG or KKKK, as applicable, of this part.)

(j) Any affected facility meeting the applicability requirements under paragraph (a) of this section and commencing construction, modification, or reconstruction after June 19, 1986 is not subject to subpart D (Standards of Performance for Fossil-Fuel-Fired Steam Generators, § 60.40).

(k) Any affected facility that meets the applicability requirements and is subject to an EPA approved State or Federal section 111(d)/129 plan implementing subpart Cb or subpart BBBB of this part is not covered by this subpart.

(l) Affected facilities that also meet the applicability requirements under subpart BB of this part (Standards of Performance for Kraft Pulp Mills) are subject to the SO_2 and NO_x standards under this subpart and the PM standards under subpart BB.

(m) Temporary boilers are not subject to this subpart.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5084, Jan. 28, 2009; 77 FR 9459, Feb. 16, 2012]

§ 60.41b Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from the fuels listed in § 60.42b(a), § 60.43b(a), or § 60.44b(a), as applicable, during a calendar year and the potential heat input to the steam generating unit had it been operated for 8,760 hours during a calendar year at the maximum steady state design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility in a calendar year.

Byproduct/waste means any liquid or gaseous substance produced at chemical manufacturing plants, petroleum refineries, or pulp and paper mills (except natural gas, distillate oil, or residual oil) and combusted in a steam generating unit for heat recovery or for disposal. Gaseous substances with carbon dioxide (CO_2) levels greater than 50 percent or carbon monoxide levels greater than 10 percent are not byproduct/waste for the purpose of this subpart.

Chemical manufacturing plants mean industrial plants that are classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 28.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see § 60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels, including but not limited to solvent refined coal, gasified coal not meeting the definition of natural gas, coal-oil mixtures, coke oven gas, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

Coal refuse means any byproduct of coal mining or coal cleaning operations with an ash content greater than 50 percent, by weight, and a heating value less than 13,900 kJ/kg (6,000 Btu/lb) on a dry basis.

Cogeneration , also known as combined heat and power, means a facility that simultaneously produces both electric (or mechanical) and useful thermal energy from the same primary energy source.

Coke oven gas means the volatile constituents generated in the gaseous exhaust during the carbonization of bituminous coal to form coke.

Combined cycle system means a system in which a separate source, such as a gas turbine, internal combustion engine, kiln, etc., provides exhaust gas to a steam generating unit.

Conventional technology means wet flue gas desulfurization (FGD) technology, dry FGD technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oils that contain 0.05 weight percent nitrogen or less and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see § 60.17), diesel fuel oil numbers 1 and 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see § 60.17), kerosine, as defined by the American Society of Testing and Materials in ASTM D3699 (incorporated by reference, see § 60.17), biodiesel as defined by the American Society of Testing and Materials in ASTM D6751 (incorporated by reference, see § 60.17), or biodiesel blends as defined by the American Society of Testing and Materials in ASTM D7467 (incorporated by reference, see § 60.17).

Dry flue gas desulfurization technology means a SO_2 control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline slurries or solutions used in dry flue gas desulfurization technology include but are not limited to lime and sodium.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary gas turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

Emerging technology means any SO_2 control system that is not defined as a conventional technology under this section, and for which the owner or operator of the facility has applied to the Administrator and received approval to operate as an emerging technology under § 60.49b(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State Implementation Plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 51.24.

Fluidized bed combustion technology means combustion of fuel in a bed or series of beds (including but not limited to bubbling bed units and circulating bed units) of limestone aggregate (or other sorbent materials) in which these materials are forced upward by the flow of combustion air and the gaseous products of combustion.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Full capacity means operation of the steam generating unit at 90 percent or more of the maximum steady-state design heat input capacity.

Gaseous fuel means any fuel that is a gas at ISO conditions. This includes, but is not limited to, natural gas and gasified coal (including coke oven gas).

Gross output means the gross useful work performed by the steam generated. For units generating only electricity, the gross useful work performed is the gross electrical output from the turbine/generator set. For cogeneration units, the gross useful work performed is the gross electrical or mechanical output plus 75 percent of the useful thermal output measured relative to ISO conditions that is not used to generate additional electrical or mechanical output or to enhance the performance of the unit (*i.e.* , steam delivered to an industrial process).

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

Heat release rate means the steam generating unit design heat input capacity (in MW or Btu/hr) divided by the furnace volume (in cubic meters or cubic feet); the furnace volume is that volume bounded by the front furnace wall where the burner is located, the furnace side waterwall, and extending to the level just below or in front of the first row of convection pass tubes.

Heat transfer medium means any material that is used to transfer heat from one point to another point.

High heat release rate means a heat release rate greater than 730,000 J/sec-m^3 (70,000 Btu/hr-ft^3).

ISO Conditions means a temperature of 288 Kelvin, a relative humidity of 60 percent, and a pressure of 101.3 kilopascals.

Lignite means a type of coal classified as lignite A or lignite B by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see § 60.17).

Low heat release rate means a heat release rate of 730,000 J/sec-m^3 (70,000 Btu/hr-ft^3) or less.

Mass-feed stoker steam generating unit means a steam generating unit where solid fuel is introduced directly into a retort or is fed directly onto a grate where it is combusted.

Maximum heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel on a steady state basis, as determined by the physical design and characteristics of the steam generating unit.

Municipal-type solid waste means refuse, more than 50 percent of which is waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials, and noncombustible materials such as glass and rock.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

(2) Liquefied petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see § 60.17); or

(3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 34 and 43 megajoules (MJ) per dry standard cubic meter (910 and 1,150 Btu per dry standard cubic foot).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Oil means crude oil or petroleum or a liquid fuel derived from crude oil or petroleum, including distillate and residual oil.

Petroleum refinery means industrial plants as classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 29.

Potential sulfur dioxide emission rate means the theoretical SO_2 emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems. For gasified coal or oil that is desulfurized prior to combustion, the *Potential sulfur dioxide emission rate* is the theoretical SO_2 emissions (ng/J or lb/MMBtu heat input) that would result from combusting fuel in a cleaned state without using any post combustion emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Pulp and paper mills means industrial plants that are classified by the Department of Commerce under North American Industry Classification System (NAICS) Code 322 or Standard Industrial Classification (SIC) Code 26.

Pulverized coal-fired steam generating unit means a steam generating unit in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the steam generating unit where it is fired in suspension. This includes both conventional pulverized coal-fired and micropulverized coal-fired steam generating units. Residual oil means crude oil, fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05 weight percent, and all fuel oil numbers 4, 5 and 6, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see § 60.17).

Spreader stoker steam generating unit means a steam generating unit in which solid fuel is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

Steam generating unit means a device that combusts any fuel or byproduct/waste and produces steam or heats water or heats any heat transfer medium. This term includes any municipal-type solid waste incinerator with a heat recovery steam generating unit or any steam generating unit that combusts fuel and is part of a cogeneration system or a combined cycle system. This term does not include process heaters as they are defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Temporary boiler means any gaseous or liquid fuel-fired steam generating unit that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A steam generating unit is not a temporary boiler if any one of the following conditions exists:

(1) The equipment is attached to a foundation.

(2) The steam generating unit or a replacement remains at a location for more than 180 consecutive days. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.

(3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.

(4) The equipment is moved from one location to another in an attempt to circumvent the residence time requirements of this definition.

Very low sulfur oil means for units constructed, reconstructed, or modified on or before February 28, 2005, oil that contains no more than 0.5 weight percent sulfur or that, when combusted without SO_2 emission control, has a SO_2 emission rate equal to or less than 215 ng/J (0.5 lb/MMBtu) heat input. For units constructed, reconstructed, or modified after February 28, 2005 and not located in a noncontinental area, *very low sulfur oil* means oil that contains no more than 0.30 weight percent sulfur or that, when combusted without SO_2 emission control, has a SO_2 emission rate equal to or less than 140 ng/J (0.32 lb/MMBtu) heat input. For units constructed, reconstructed, or modified after February 28, 2005 and located in a noncontinental area, *very low sulfur oil* means oil that contains no more than 0.5 weight percent sulfur or that, when combusted without SO_2 emission control, has a SO_2 emission rate equal to or less than 215 ng/J (0.50 lb/MMBtu) heat input.

Wet flue gas desulfurization technology means a SO_2 control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gas with an alkaline slurry or solution and forming a liquid material. This definition applies to devices where the aqueous liquid material product of this contact is subsequently converted to other forms. Alkaline reagents used in wet flue gas desulfurization technology include, but are not limited to, lime, limestone, and sodium.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of PM or SO_2 .

Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including, but not limited to, sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5084, Jan. 28, 2009; 77 FR 9459, Feb. 16, 2012]

§ 60.42b Standard for sulfur dioxide (SO_2).

(a) Except as provided in paragraphs (b), (c), (d), or (j) of this section, on and after the date on which the performance test is completed or required to be completed under § 60.8, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts coal or oil shall cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) or 10 percent (0.10) of the potential SO_2 emission rate (90 percent reduction) and the emission limit determined according to the following formula:

$$E_s = \frac{(K_a H_a + K_b H_b)}{(H_a + H_b)}$$

Where:

E_s = SO_2 emission limit, in ng/J or lb/MMBtu heat input;

K_a = 520 ng/J (or 1.2 lb/MMBtu);

K_b = 340 ng/J (or 0.80 lb/MMBtu);

H_a = Heat input from the combustion of coal, in J (MMBtu); and

H_b = Heat input from the combustion of oil, in J (MMBtu).

For facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted in this paragraph. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(b) On and after the date on which the performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts coal refuse alone in a fluidized bed combustion steam generating unit shall cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) or 20 percent (0.20) of the potential SO_2 emission rate (80 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input. If coal or oil is fired with coal refuse, the affected facility is subject to paragraph (a) or (d) of this section, as applicable. For facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted in this paragraph. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(c) On and after the date on which the performance test is completed or is required to be completed under § 60.8, whichever comes first, no owner or operator of an affected facility that combusts coal or oil, either alone or in combination with any other fuel, and that uses an emerging technology for the control of SO_2 emissions, shall cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 50 percent of the potential SO_2 emission rate (50 percent reduction) and that contain SO_2 in excess of the emission limit determined according to the following formula:

$$E_s = \frac{(K_c H_c + K_d H_d)}{(H_c + H_d)}$$

Where:

E_s = SO2 emission limit, in ng/J or lb/MM Btu heat input;

K_c = 260 ng/J (or 0.60 lb/MMBtu);

K_d = 170 ng/J (or 0.40 lb/MMBtu);

H_c = Heat input from the combustion of coal, in J (MMBtu); and

H_d = Heat input from the combustion of oil, in J (MMBtu).

For facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted in this paragraph. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels, or from the heat input derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(d) On and after the date on which the performance test is completed or required to be completed under § 60.8, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005 and listed in paragraphs (d)(1), (2), (3), or (4) of this section shall cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input if the affected facility combusts coal, or 215 ng/J (0.5 lb/MMBtu) heat input if the affected facility combusts oil other than very low sulfur oil. Percent reduction requirements are not applicable to affected facilities under paragraphs (d)(1), (2), (3) or (4) of this section. For facilities complying with paragraphs (d)(1), (2), or (3) of this section, only the heat input supplied to the affected facility from the combustion of coal and oil is counted in this paragraph. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(1) Affected facilities that have an annual capacity factor for coal and oil of 30 percent (0.30) or less and are subject to a federally enforceable permit limiting the operation of the affected facility to an annual capacity factor for coal and oil of 30 percent (0.30) or less;

(2) Affected facilities located in a noncontinental area; or

(3) Affected facilities combusting coal or oil, alone or in combination with any fuel, in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat entering the steam generating unit is from combustion of coal and oil in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from the exhaust gases entering the duct burner; or

(4) The affected facility burns coke oven gas alone or in combination with natural gas or very low sulfur distillate oil.

(e) Except as provided in paragraph (f) of this section, compliance with the emission limits, fuel oil sulfur limits, and/or percent reduction requirements under this section are determined on a 30-day rolling average basis.

(f) Except as provided in paragraph (j)(2) of this section, compliance with the emission limits or fuel oil sulfur limits under this section is determined on a 24-hour average basis for affected facilities that (1) have a federally enforceable permit limiting the annual capacity factor for oil to 10 percent or less, (2) combust only very low sulfur oil, and (3) do not combust any other fuel.

(g) Except as provided in paragraph (i) of this section and § 60.45b(a), the SO_2 emission limits and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(h) Reductions in the potential SO_2 emission rate through fuel pretreatment are not credited toward the percent reduction requirement under paragraph (c) of this section unless:

(1) Fuel pretreatment results in a 50 percent or greater reduction in potential SO_2 emissions and

(2) Emissions from the pretreated fuel (without combustion or post-combustion SO_2 control) are equal to or less than the emission limits specified in paragraph (c) of this section.

(i) An affected facility subject to paragraph (a), (b), or (c) of this section may combust very low sulfur oil or natural gas when the SO_2 control system is not being operated because of malfunction or maintenance of the SO_2 control system.

(j) Percent reduction requirements are not applicable to affected facilities combusting only very low sulfur oil. The owner or operator of an affected facility combusting very low sulfur oil shall demonstrate that the oil meets the definition of very low sulfur oil by: (1) Following the performance testing procedures as described in § 60.45b(c) or § 60.45b(d), and following the monitoring procedures as described in § 60.47b(a) or § 60.47b(b) to determine SO_2 emission rate or fuel oil sulfur content; or (2) maintaining fuel records as described in § 60.49b(r).

(k)(1) Except as provided in paragraphs (k)(2), (k)(3), and (k)(4) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, natural gas, a mixture of these fuels, or a mixture of these fuels with any other fuels shall cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 8 percent (0.08) of the potential SO_2 emission rate (92 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input. For facilities complying with the percent reduction standard and paragraph (k)(3) of this section, only the heat input supplied to the affected facility from the combustion of coal and oil is counted in paragraph (k) of this section. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(2) Units firing only very low sulfur oil, gaseous fuel, a mixture of these fuels, or a mixture of these fuels with any other fuels with a potential SO_2 emission rate of 140 ng/J (0.32 lb/MMBtu) heat input or less are exempt from the SO_2 emissions limit in paragraph (k)(1) of this section.

(3) Units that are located in a noncontinental area and that combust coal, oil, or natural gas shall not discharge any gases that contain SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input if the affected facility combusts coal, or 215 ng/J (0.50 lb/MMBtu) heat input if the affected facility combusts oil or natural gas.

(4) As an alternative to meeting the requirements under paragraph (k)(1) of this section, modified facilities that combust coal or a mixture of coal with other fuels shall not cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO_2 emission rate (90 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5084, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011]

§ 60.43b Standard for particulate matter (PM).

(a) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005 that combusts coal or combusts mixtures of coal with other fuels, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 22 ng/J (0.051 lb/MMBtu) heat input, (i) If the affected facility combusts only coal, or

(ii) If the affected facility combusts coal and other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility combusts coal and other fuels and has an annual capacity factor for the other fuels greater than 10 percent (0.10) and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.

(3) 86 ng/J (0.20 lb/MMBtu) heat input if the affected facility combusts coal or coal and other fuels and

(i) Has an annual capacity factor for coal or coal and other fuels of 30 percent (0.30) or less,

(ii) Has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less,

(iii) Has a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for coal or coal and other solid fuels, and

(iv) Construction of the affected facility commenced after June 19, 1984, and before November 25, 1986.

(4) An affected facility burning coke oven gas alone or in combination with other fuels not subject to a PM standard under § 60.43b and not using a post-combustion technology (except a wet scrubber) for reducing PM or SO_2 emissions is not subject to the PM limits under § 60.43b(a).

(b) On and after the date on which the performance test is completed or required to be completed under § 60.8, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, and that combusts oil (or mixtures of oil with other fuels) and uses a conventional or emerging technology to reduce SO_2 emissions shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 43 ng/J (0.10 lb/MMBtu) heat input.

(c) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, and that combusts wood, or wood with other fuels, except coal, shall cause to be discharged from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility has an annual capacity factor greater than 30 percent (0.30) for wood.

(2) 86 ng/J (0.20 lb/MMBtu) heat input if (i) The affected facility has an annual capacity factor of 30 percent (0.30) or less for wood;

(ii) Is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for wood; and

(iii) Has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less.

(d) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts municipal-type solid waste or mixtures of municipal-type solid waste with other fuels, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 43 ng/J (0.10 lb/MMBtu) heat input;

(i) If the affected facility combusts only municipal-type solid waste; or

(ii) If the affected facility combusts municipal-type solid waste and other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 86 ng/J (0.20 lb/MMBtu) heat input if the affected facility combusts municipal-type solid waste or municipal-type solid waste and other fuels; and

(i) Has an annual capacity factor for municipal-type solid waste and other fuels of 30 percent (0.30) or less;

(ii) Has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less;

(iii) Has a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for municipal-type solid waste, or municipal-type solid waste and other fuels; and

(iv) Construction of the affected facility commenced after June 19, 1984, but on or before November 25, 1986.

(e) For the purposes of this section, the annual capacity factor is determined by dividing the actual heat input to the steam generating unit during the calendar year from the combustion of coal, wood, or municipal-type solid waste, and other fuels, as applicable, by the potential heat input to the steam generating unit if the steam generating unit had been operated for 8,760 hours at the maximum heat input capacity.

(f) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, oil, wood, or mixtures of these fuels with any other fuels shall cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. An owner or operator of an affected facility that elects to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions according to the requirements of this subpart and is subject to a federally enforceable PM limit of 0.030 lb/MMBtu or less is exempt from the opacity standard specified in this paragraph.

(g) The PM and opacity standards apply at all times, except during periods of startup, shutdown, or malfunction.

(h)(1) Except as provided in paragraphs (h)(2), (h)(3), (h)(4), (h)(5), and (h)(6) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 13 ng/J (0.030 lb/MMBtu) heat input,

(2) As an alternative to meeting the requirements of paragraph (h)(1) of this section, the owner or operator of an affected facility for which modification commenced after February 28, 2005, may elect to meet the requirements of this paragraph. On and after the date on which the initial performance test is completed or required to be completed under § 60.8, no owner or operator of an affected facility that commences modification after February 28, 2005 shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of both:

(i) 22 ng/J (0.051 lb/MMBtu) heat input derived from the combustion of coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels; and

(ii) 0.2 percent of the combustion concentration (99.8 percent reduction) when combusting coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels.

(3) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a maximum heat input capacity of 73 MW (250 MMBtu/h) or less shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 43 ng/J (0.10 lb/MMBtu) heat input.

(4) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a maximum heat input capacity greater than 73 MW (250 MMBtu/h) shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 37 ng/J (0.085 lb/MMBtu) heat input.

(5) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, an owner or operator of an affected facility not located in a noncontinental area that commences construction, reconstruction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.30 weight percent sulfur, coke oven gas, a mixture of these fuels, or either fuel (or a mixture of these fuels) in combination with other fuels not subject to a PM standard in § 60.43b and not using a post-combustion technology (except a wet scrubber) to reduce SO_2 or PM emissions is not subject to the PM limits in (h)(1) of this section.

(6) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, an owner or operator of an affected facility located in a noncontinental area that commences construction, reconstruction, or modification after February 28,

2005, and that combusts only oil that contains no more than 0.5 weight percent sulfur, coke oven gas, a mixture of these fuels, or either fuel (or a mixture of these fuels) in combination with other fuels not subject to a PM standard in § 60.43b and not using a post-combustion technology (except a wet scrubber) to reduce SO_2 or PM emissions is not subject to the PM limits in (h)(1) of this section.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5084, Jan. 28, 2009; 77 FR 9459, Feb. 16, 2012]

§ 60.44b Standard for nitrogen oxides (NO_x).

(a) Except as provided under paragraphs (k) and (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that is subject to the provisions of this section and that combusts only coal, oil, or natural gas shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_x (expressed as NO_2) in excess of the following emission limits:

	Nitrogen oxide emission limits (expressed as NO_2) heat input	
Fuel/steam generating unit type	**ng/J**	**lb/MMBTu**
(1) Natural gas and distillate oil, except (4):		
(i) Low heat release rate	43	0.10
(ii) High heat release rate	86	0.20
(2) Residual oil:		
(i) Low heat release rate	130	0.30
(ii) High heat release rate	170	0.40
(3) Coal:		
(i) Mass-feed stoker	210	0.50
(ii) Spreader stoker and fluidized bed combustion	260	0.60
(iii) Pulverized coal	300	0.70
(iv) Lignite, except (v)	260	0.60
(v) Lignite mined in North Dakota, South Dakota, or Montana and combusted in a slag tap furnace	340	0.80
(vi) Coal-derived synthetic fuels	210	0.50
(4) Duct burner used in a combined cycle system:		
(i) Natural gas and distillate oil	86	0.20
(ii) Residual oil	170	0.40

(b) Except as provided under paragraphs (k) and (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts mixtures of only coal, oil, or natural gas shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_x in excess of a limit determined by the use of the following formula:

$$E_n = \frac{(EL_{go}H_{go}) + (EL_{ro}H_{ro}) + (EL_cH_c)}{(H_{go} + H_{ro} + H_c)}$$

Where:

E_n = NO_x emission limit (expressed as NO_2), ng/J (lb/MMBtu);

EL_{go} = Appropriate emission limit from paragraph (a)(1) for combustion of natural gas or distillate oil, ng/J (lb/MMBtu);

H_{go} = Heat input from combustion of natural gas or distillate oil, J (MMBtu);

EL_{ro} = Appropriate emission limit from paragraph (a)(2) for combustion of residual oil, ng/J (lb/MMBtu);

H_{ro} = Heat input from combustion of residual oil, J (MMBtu);

EL_c = Appropriate emission limit from paragraph (a)(3) for combustion of coal, ng/J (lb/MMBtu); and

H_c = Heat input from combustion of coal, J (MMBtu).

(c) Except as provided under paragraph (d) and (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts coal or oil, natural gas (or any combination of the three), and wood, or any other fuel shall cause to be discharged into the atmosphere any gases that contain NO_x in excess of the emission limit for the coal, oil, natural gas (or any combination of the three), combusted in the affected facility, as determined pursuant to paragraph (a) or (b) of this section. This standard does not apply to an affected facility that is subject to and in compliance with a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, natural gas (or any combination of the three).

(d) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts natural gas and/or distillate oil with a potential SO_2 emissions rate of 26 ng/J (0.060 lb/MMBtu) or less with wood, municipal-type solid waste, or other solid fuel, except coal, shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_x in excess of 130 ng/J (0.30 lb/MMBtu) heat input unless the affected facility has an annual capacity factor for natural gas, distillate oil, or a mixture of these fuels of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less for natural gas, distillate oil, or a mixture of these fuels.

(e) Except as provided under paragraph (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts only coal, oil, or natural gas with byproduct/waste shall cause to be discharged into the atmosphere any gases that contain NO_x in excess of the emission limit determined by the following formula unless the affected facility has an annual capacity factor for coal, oil, and natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less:

(f) Any owner or operator of an affected facility that combusts byproduct/waste with either natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility to establish a NO_x emission limit that shall apply specifically to that affected facility when the byproduct/waste is combusted. The petition shall include sufficient and appropriate data, as determined by the Administrator, such as NO_x emissions from the affected facility, waste composition (including nitrogen content), and combustion conditions to allow the Administrator to confirm that the affected facility is unable to comply with the emission limits in paragraph (e) of this section and to determine the appropriate emission limit for the affected facility.

(1) Any owner or operator of an affected facility petitioning for a facility-specific NO_x emission limit under this section shall:

(i) Demonstrate compliance with the emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, by conducting a 30-day performance test as provided in § 60.46b(e). During the performance test only natural gas, distillate oil, or residual oil shall be combusted in the affected facility; and

(ii) Demonstrate that the affected facility is unable to comply with the emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, when gaseous or liquid byproduct/waste is combusted in the affected facility under the same conditions and using the same technological system of emission reduction applied when demonstrating compliance under paragraph (f)(1)(i) of this section.

(2) The NO_x emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, shall be applicable to the affected facility until and unless the petition is approved by the Administrator. If the petition is approved by the Administrator, a facility-specific NO_x emission limit will be established at the NO_x emission level achievable when the affected facility is combusting oil or natural gas and byproduct/waste in a manner that the Administrator determines to be consistent with minimizing NO_x emissions. In lieu of amending this subpart, a letter will be sent to the facility describing the facility-specific NO_x limit. The facility shall use the compliance procedures detailed in the letter and make the letter available to the public. If the Administrator determines it is appropriate, the conditions and requirements of the letter can be reviewed and changed at any point.

(g) Any owner or operator of an affected facility that combusts hazardous waste (as defined by 40 CFR part 261 or 40 CFR part 761) with natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility for a waiver from compliance with the NO_x emission limit that applies specifically to that affected facility. The petition must include sufficient and appropriate data, as determined by the Administrator, on NO_x emissions from the affected facility, waste destruction efficiencies, waste composition (including nitrogen content), the quantity of specific wastes to be combusted and combustion conditions to allow the Administrator to determine if the affected facility is able to comply with the NO_x emission limits required by this section. The owner or operator of the affected facility shall demonstrate that when hazardous waste is combusted in the affected facility, thermal destruction efficiency requirements for hazardous waste specified in an applicable federally enforceable requirement preclude compliance with the NO_x emission limits of this section. The NO_x emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, are applicable to the affected facility until and unless the petition is approved by the Administrator. (See 40 CFR 761.70 for regulations applicable to the incineration of materials containing polychlorinated biphenyls (PCB's).) In lieu of amending this subpart, a letter will be sent to the facility describing the facility-specific NO_x limit. The facility shall use the compliance procedures detailed in the letter and make the letter available to the public. If the Administrator determines it is appropriate, the conditions and requirements of the letter can be reviewed and changed at any point.

(h) For purposes of paragraph (i) of this section, the NO_x standards under this section apply at all times including periods of startup, shutdown, or malfunction.

(i) Except as provided under paragraph (j) of this section, compliance with the emission limits under this section is determined on a 30-day rolling average basis.

(j) Compliance with the emission limits under this section is determined on a 24-hour average basis for the initial performance test and on a 3-hour average basis for subsequent performance tests for any affected facilities that:

(1) Combust, alone or in combination, only natural gas, distillate oil, or residual oil with a nitrogen content of 0.30 weight percent or less;

(2) Have a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less; and

(3) Are subject to a federally enforceable requirement limiting operation of the affected facility to the firing of natural gas, distillate oil, and/or residual oil with a nitrogen content of 0.30 weight percent or less and limiting operation of the affected facility to a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less.

(k) Affected facilities that meet the criteria described in paragraphs (j)(1), (2), and (3) of this section, and that have a heat input capacity of 73 MW (250 MMBtu/hr) or less, are not subject to the NO_x emission limits under this section.

(l) On and after the date on which the initial performance test is completed or is required to be completed under 60.8, whichever date is first, no owner or operator of an affected facility that commenced construction after July 9, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain NOx (expressed as NO2) in excess of the following limits:

(1) 86 ng/J (0.20 lb/MMBtu) heat input if the affected facility combusts coal, oil, or natural gas (or any combination of the three), alone or with any other fuels. The affected facility is not subject to this limit if it is subject to and in compliance with a federally enforceable requirement that limits operation of the facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, and natural gas (or any combination of the three); or

(2) If the affected facility has a low heat release rate and combusts natural gas or distillate oil in excess of 30 percent of the heat input on a 30-day rolling average from the combustion of all fuels, a limit determined by use of the following formula:

$$E_n = \frac{(0.10 \times H_{go}) + (0.20 \times H_r)}{(H_{go} + H_r)}$$

Where:

E_n = NO_x emission limit, (lb/MMBtu);

H_{go} = 30-day heat input from combustion of natural gas or distillate oil; and

H_r = 30-day heat input from combustion of any other fuel.

(3) After February 27, 2006, units where more than 10 percent of total annual output is electrical or mechanical may comply with an optional limit of 270 ng/J (2.1 lb/MWh) gross energy output, based on a 30-day rolling average. Units complying with this output-based limit must demonstrate compliance according to the procedures of § 60.48Da(i) of subpart Da of this part, and must monitor emissions according to § 60.49Da(c), (k), through (n) of subpart Da of this part.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5086, Jan. 28, 2009; 77 FR 9459, Feb. 16, 2012]

§ 60.45b Compliance and performance test methods and procedures for sulfur dioxide.

(a) The SO_2 emission standards in § 60.42b apply at all times. Facilities burning coke oven gas alone or in combination with any other gaseous fuels or distillate oil are allowed to exceed the limit 30 operating days per calendar year for SO_2 control system maintenance.

(b) In conducting the performance tests required under § 60.8, the owner or operator shall use the methods and procedures in appendix A (including fuel certification and sampling) of this part or the methods and procedures as specified in this section, except as provided in § 60.8(b). Section 60.8(f) does not apply to this section. The 30-day notice required in § 60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.

(c) The owner or operator of an affected facility shall conduct performance tests to determine compliance with the percent of potential SO_2 emission rate (% P_s) and the SO_2 emission rate (E_s) pursuant to § 60.42b following the procedures listed below, except as provided under paragraph (d) and (k) of this section.

(1) The initial performance test shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the SO_2 standards shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility.

(2) If only coal, only oil, or a mixture of coal and oil is combusted, the following procedures are used:

(i) The procedures in Method 19 of appendix A-7 of this part are used to determine the hourly SO_2 emission rate (E_{ho}) and the 30-day average emission rate (E_{ao}). The hourly averages used to compute the 30-day averages are obtained from the CEMS of § 60.47b(a) or (b).

(ii) The percent of potential SO_2 emission rate (%P_s) emitted to the atmosphere is computed using the following formula:

$$\%P_s = 100\left(1 - \frac{\%R_g}{100}\right)\left(1 - \frac{\%R_f}{100}\right)$$

Where:

%P_s = Potential SO_2 emission rate, percent;

%R_g = SO_2 removal efficiency of the control device as determined by Method 19 of appendix A of this part, in percent; and

%R_f = SO_2 removal efficiency of fuel pretreatment as determined by Method 19 of appendix A of this part, in percent.

(3) If coal or oil is combusted with other fuels, the same procedures required in paragraph (c)(2) of this section are used, except as provided in the following:

(i) An adjusted hourly SO_2 emission rate (E_{ho} °) is used in Equation 19-19 of Method 19 of appendix A of this part to compute an adjusted 30-day average emission rate (E_{ao} °). The Eho° is computed using the following formula:

$$E_{ho}^{\circ} = \frac{E_{ho} - E_w(1 - X_1)}{X_1}$$

Where:

$E_{ho}{}^{o}$ = Adjusted hourly SO_2 emission rate, ng/J (lb/MMBtu);

E_{ho} = Hourly SO_2 emission rate, ng/J (lb/MMBtu);

E_w = SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by the fuel sampling and analysis procedures in Method 19 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted; and

X_k = Fraction of total heat input from fuel combustion derived from coal, oil, or coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.

(ii) To compute the percent of potential SO_2 emission rate ($\%P_s$), an adjusted $\%R_g$ ($\%R_g{}^{o}$) is computed from the adjusted $E_{ao}{}^{o}$ from paragraph (b)(3)(i) of this section and an adjusted average SO_2 inlet rate ($E_{ai}{}^{o}$) using the following formula:

$$\%R_g^{o} = 100\left(1.0 - \frac{E_{ao}^{o}}{E_{ai}^{o}}\right)$$

To compute $E_{ai}{}^{o}$, an adjusted hourly SO_2 inlet rate ($E_{hi}{}^{o}$) is used. The $E_{hi}{}^{o}$ is computed using the following formula:

$$E_{hi}^{o} = \frac{E_{hi} - E_w(1 - X_k)}{X_k}$$

Where:

$E_{hi}{}^{o}$ = Adjusted hourly SO_2 inlet rate, ng/J (lb/MMBtu); and

E_{hi} = Hourly SO_2 inlet rate, ng/J (lb/MMBtu).

(4) The owner or operator of an affected facility subject to paragraph (c)(3) of this section does not have to measure parameters E_w or X_k if the owner or operator elects to assume that X_k = 1.0. Owners or operators of affected facilities who assume X_k = 1.0 shall:

(i) Determine $\%P_s$ following the procedures in paragraph (c)(2) of this section; and

(ii) Sulfur dioxide emissions (E_s) are considered to be in compliance with SO_2 emission limits under § 60.42b.

(5) The owner or operator of an affected facility that qualifies under the provisions of § 60.42b(d) does not have to measure parameters E_w or X_k in paragraph (c)(3) of this section if the owner or operator of the affected facility elects to measure SO_2 emission rates of the coal or oil following the fuel sampling and analysis procedures in Method 19 of appendix A-7 of this part.

(d) Except as provided in paragraph (j) of this section, the owner or operator of an affected facility that combusts only very low sulfur oil, natural gas, or a mixture of these fuels, has an annual capacity factor for oil of 10 percent (0.10) or less, and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for oil of 10 percent (0.10) or less shall:

(1) Conduct the initial performance test over 24 consecutive steam generating unit operating hours at full load;

(2) Determine compliance with the standards after the initial performance test based on the arithmetic average of the hourly emissions data during each steam generating unit operating day if a CEMS is used, or based on a daily average if Method 6B of appendix A of this part or fuel sampling and analysis procedures under Method 19 of appendix A of this part are used.

(e) The owner or operator of an affected facility subject to § 60.42b(d)(1) shall demonstrate the maximum design capacity of the steam generating unit by operating the facility at maximum capacity for 24 hours. This demonstration will be made during the initial performance test and a subsequent demonstration may be requested at any other time. If the 24-hour average firing rate for the affected facility is less than the maximum design capacity provided by the manufacturer of the affected facility, the 24-hour average firing rate shall be used to determine the capacity utilization rate for the affected facility, otherwise the maximum design capacity provided by the manufacturer is used.

(f) For the initial performance test required under § 60.8, compliance with the SO_2 emission limits and percent reduction requirements under § 60.42b is based on the average emission rates and the average percent reduction for SO_2 for the first 30 consecutive steam generating unit operating days, except as provided under paragraph (d) of this section. The initial performance test is the only test for which at least 30 days prior notice is required unless otherwise specified by the Administrator. The initial performance test is to be scheduled so that the first steam generating unit operating day of the 30 successive steam generating unit operating days is completed within 30 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility. The boiler load during the 30-day period does not have to be the maximum design load, but must be representative of future operating conditions and include at least one 24-hour period at full load.

(g) After the initial performance test required under § 60.8, compliance with the SO_2 emission limits and percent reduction requirements under § 60.42b is based on the average emission rates and the average percent reduction for SO_2 for 30 successive steam generating unit operating days, except as provided under paragraph (d). A separate performance test is completed at the end of each steam generating unit operating day after the initial performance test, and a new 30-day average emission rate and percent reduction for SO_2 are calculated to show compliance with the standard.

(h) Except as provided under paragraph (i) of this section, the owner or operator of an affected facility shall use all valid SO_2 emissions data in calculating $\%P_s$ and E_{ho} under paragraph (c), of this section whether or not the minimum emissions data requirements under § 60.46b are achieved. All valid emissions data, including valid SO_2 emission data collected during periods of startup, shutdown and malfunction, shall be used in calculating $\%P_s$ and E_{ho} pursuant to paragraph (c) of this section.

(i) During periods of malfunction or maintenance of the SO_2 control systems when oil is combusted as provided under § 60.42b(i), emission data are not used to calculate $\%P_s$ or E_s under § 60.42b(a), (b) or (c), however, the emissions data are used to determine compliance with the emission limit under § 60.42b(i).

(j) The owner or operator of an affected facility that only combusts very low sulfur oil, natural gas, or a mixture of these fuels with any other fuels not subject to an SO_2 standard is not subject to the compliance and performance testing requirements of this section if the owner or operator obtains fuel receipts as described in § 60.49b(r).

(k) The owner or operator of an affected facility seeking to demonstrate compliance in §§ 60.42b(d)(4), 60.42b(j), 60.42b(k)(2), and 60.42b(k)(3) (when not burning coal) shall follow the applicable procedures in § 60.49b(r).

[72 FR 32742, June 13, 2007, as amended at 74 FR 5086, Jan. 28, 2009]

§ 60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.

(a) The PM emission standards and opacity limits under § 60.43b apply at all times except during periods of startup, shutdown, or malfunction. The NO_x emission standards under § 60.44b apply at all times.

(b) Compliance with the PM emission standards under § 60.43b shall be determined through performance testing as described in paragraph (d) of this section, except as provided in paragraph (i) of this section.

(c) Compliance with the NO_x emission standards under § 60.44b shall be determined through performance testing under paragraph (e) or (f), or under paragraphs (g) and (h) of this section, as applicable.

(d) To determine compliance with the PM emission limits and opacity limits under § 60.43b, the owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8, and shall conduct subsequent performance tests as requested by the Administrator, using the following procedures and reference methods:

(1) Method 3A or 3B of appendix A-2 of this part is used for gas analysis when applying Method 5 of appendix A-3 of this part or Method 17 of appendix A-6 of this part.

(2) Method 5, 5B, or 17 of appendix A of this part shall be used to measure the concentration of PM as follows:

(i) Method 5 of appendix A of this part shall be used at affected facilities without wet flue gas desulfurization (FGD) systems; and

(ii) Method 17 of appendix A-6 of this part may be used at facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of sections 8.1 and 11.1 of Method 5B of appendix A-3 of this part may be used in Method 17 of appendix A-6 of this part only if it is used after a wet FGD system. Do not use Method 17 of appendix A-6 of this part after wet FGD systems if the effluent is saturated or laden with water droplets.

(iii) Method 5B of appendix A of this part is to be used only after wet FGD systems.

(3) Method 1 of appendix A of this part is used to select the sampling site and the number of traverse sampling points. The sampling time for each run is at least 120 minutes and the minimum sampling volume is 1.7 dscm (60 dscf) except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.

(4) For Method 5 of appendix A of this part, the temperature of the sample gas in the probe and filter holder is monitored and is maintained at 160±14 °C (320±25 °F).

(5) For determination of PM emissions, the oxygen (O_2) or CO_2 sample is obtained simultaneously with each run of Method 5, 5B, or 17 of appendix A of this part by traversing the duct at the same sampling location.

(6) For each run using Method 5, 5B, or 17 of appendix A of this part, the emission rate expressed in ng/J heat input is determined using:

(i) The O_2 or CO_2 measurements and PM measurements obtained under this section;

(ii) The dry basis F factor; and

(iii) The dry basis emission rate calculation procedure contained in Method 19 of appendix A of this part.

(7) Method 9 of appendix A of this part is used for determining the opacity of stack emissions.

(e) To determine compliance with the emission limits for NO_x required under § 60.44b, the owner or operator of an affected facility shall conduct the performance test as required under § 60.8 using the continuous system for monitoring NO_x under § 60.48(b).

(1) For the initial compliance test, NO_x from the steam generating unit are monitored for 30 successive steam generating unit operating days and the 30-day average emission rate is used to determine compliance with the NO_x emission standards under § 60.44b. The 30-day average emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during the 30-day test period.

(2) Following the date on which the initial performance test is completed or is required to be completed in § 60.8, whichever date comes first, the owner or operator of an affected facility which combusts coal (except as specified under § 60.46b(e)(4)) or which combusts residual oil having a nitrogen content greater than 0.30 weight percent shall determine compliance with the NO_x emission standards in § 60.44b on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day rolling average emission rate is calculated for each steam generating unit operating day as the average of all of the hourly NO_x emission data for the preceding 30 steam generating unit operating days.

(3) Following the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, the owner or operator of an affected facility that has a heat input capacity greater than 73 MW (250 MMBtu/hr) and that combusts natural gas, distillate oil, or residual oil having a nitrogen content of 0.30 weight percent or less shall determine compliance with the NO_x standards under § 60.44b on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NO_x emission data for the preceding 30 steam generating unit operating days.

(4) Following the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, the owner or operator of an affected facility that has a heat input capacity of 73 MW (250 MMBtu/hr) or less and that combusts natural gas, distillate oil, gasified coal, or residual oil having a nitrogen content of 0.30 weight percent or less shall upon request determine compliance with the NO_x standards in § 60.44b through the use of a 30-day performance test. During periods when performance tests are not requested, NO_x emissions data collected pursuant to § 60.48b(g)(1) or § 60.48b(g)(2) are used to calculate a 30-day rolling average emission rate on a daily basis and used to prepare excess emission reports, but will not be used to determine compliance with the NO_x emission standards. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NO_x emission data for the preceding 30 steam generating unit operating days.

(5) If the owner or operator of an affected facility that combusts residual oil does not sample and analyze the residual oil for nitrogen content, as specified in § 60.49b(e), the requirements of § 60.48b(g)(1) apply and the provisions of § 60.48b(g)(2) are inapplicable.

(f) To determine compliance with the emissions limits for NO_x required by § 60.44b(a)(4) or § 60.44b(l) for duct burners used in combined cycle systems, either of the procedures described in paragraph (f)(1) or (2) of this section may be used:

(1) The owner or operator of an affected facility shall conduct the performance test required under § 60.8 as follows:

(i) The emissions rate (E) of NO_x shall be computed using Equation 1 in this section:

$$E = E_{sg} + \left(\frac{H_g}{H_b}\right)\left(E_{sg} - E_g\right) \qquad \text{(Eq.1)}$$

Where:

E = Emissions rate of NO_x from the duct burner, ng/J (lb/MMBtu) heat input;

E_{sg} = Combined effluent emissions rate, in ng/J (lb/MMBtu) heat input using appropriate F factor as described in Method 19 of appendix A of this part;

H_g = Heat input rate to the combustion turbine, in J/hr (MMBtu/hr);

H_b = Heat input rate to the duct burner, in J/hr (MMBtu/hr); and

E_g = Emissions rate from the combustion turbine, in ng/J (lb/MMBtu) heat input calculated using appropriate F factor as described in Method 19 of appendix A of this part.

(ii) Method 7E of appendix A of this part shall be used to determine the NO_x concentrations. Method 3A or 3B of appendix A of this part shall be used to determine O_2 concentration.

(iii) The owner or operator shall identify and demonstrate to the Administrator's satisfaction suitable methods to determine the average hourly heat input rate to the combustion turbine and the average hourly heat input rate to the affected duct burner.

(iv) Compliance with the emissions limits under § 60.44b(a)(4) or § 60.44b(l) is determined by the three-run average (nominal 1-hour runs) for the initial and subsequent performance tests; or

(2) The owner or operator of an affected facility may elect to determine compliance on a 30-day rolling average basis by using the CEMS specified under § 60.48b for measuring NO_x and O_2 and meet the requirements of § 60.48b. The sampling site shall be located at the outlet from the steam generating unit. The NO_x emissions rate at the outlet from the steam generating unit shall constitute the NO_x emissions rate from the duct burner of the combined cycle system.

(g) The owner or operator of an affected facility described in § 60.44b(j) or § 60.44b(k) shall demonstrate the maximum heat input capacity of the steam generating unit by operating the facility at maximum capacity for 24 hours. The owner or operator of an affected facility shall determine the maximum heat input capacity using the heat loss method or the heat input method described in sections 5 and 7.3 of the ASME *Power Test Codes* 4.1 (incorporated by reference, see § 60.17). This demonstration of maximum heat input capacity shall be made during the initial performance test for affected facilities that meet the criteria of § 60.44b(j). It shall be made within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial start-up of each facility, for affected facilities meeting the criteria of § 60.44b(k). Subsequent demonstrations may be required by the Administrator at any other time. If this demonstration indicates that the maximum heat input capacity of the affected facility is less than that stated by the manufacturer of the affected facility, the maximum heat input capacity determined during this demonstration shall be used to determine the capacity utilization rate for the affected facility. Otherwise, the maximum heat input capacity provided by the manufacturer is used.

(h) The owner or operator of an affected facility described in § 60.44b(j) that has a heat input capacity greater than 73 MW (250 MMBtu/hr) shall:

(1) Conduct an initial performance test as required under § 60.8 over a minimum of 24 consecutive steam generating unit operating hours at maximum heat input capacity to demonstrate compliance with the NO_x emission standards under § 60.44b using Method 7, 7A, 7E of appendix A of this part, or other approved reference methods; and

(2) Conduct subsequent performance tests once per calendar year or every 400 hours of operation (whichever comes first) to demonstrate compliance with the NO_x emission standards under § 60.44b over a minimum of 3 consecutive steam generating unit operating hours at maximum heat input capacity using Method 7, 7A, 7E of appendix A of this part, or other approved reference methods.

(i) The owner or operator of an affected facility seeking to demonstrate compliance with the PM limit in paragraphs § 60.43b(a)(4) or § 60.43b(h)(5) shall follow the applicable procedures in § 60.49b(r).

(j) In place of PM testing with Method 5 or 5B of appendix A-3 of this part, or Method 17 of appendix A-6 of this part, an owner or operator may elect to install, calibrate, maintain, and operate a CEMS for monitoring PM emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility who elects to continuously monitor PM emissions instead of conducting performance testing using Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part shall comply with the requirements specified in paragraphs (j)(1) through (j)(14) of this section.

(1) Notify the Administrator one month before starting use of the system.

(2) Notify the Administrator one month before stopping use of the system.

(3) The monitor shall be installed, evaluated, and operated in accordance with § 60.13 of subpart A of this part.

(4) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the affected facility, as specified under § 60.8 of subpart A of this part or within 180 days of notification to the Administrator of use of the CEMS if the owner or operator was previously determining compliance by Method 5, 5B, or 17 of appendix A of this part performance tests, whichever is later.

(5) The owner or operator of an affected facility shall conduct an initial performance test for PM emissions as required under § 60.8 of subpart A of this part. Compliance with the PM emission limit shall be determined by using the CEMS specified in paragraph (j) of this section to measure PM and calculating a 24-hour block arithmetic average emission concentration using EPA Reference Method 19 of appendix A of this part, section 4.1.

(6) Compliance with the PM emission limit shall be determined based on the 24-hour daily (block) average of the hourly arithmetic average emission concentrations using CEMS outlet data.

(7) At a minimum, valid CEMS hourly averages shall be obtained as specified in paragraphs (j)(7)(i) of this section for 75 percent of the total operating hours per 30-day rolling average.

(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) [Reserved]

(8) The 1-hour arithmetic averages required under paragraph (j)(7) of this section shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the boiler operating day daily

arithmetic average emission concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under § 60.13(e)(2) of subpart A of this part.

(9) All valid CEMS data shall be used in calculating average emission concentrations even if the minimum CEMS data requirements of paragraph (j)(7) of this section are not met.

(10) The CEMS shall be operated according to Performance Specification 11 in appendix B of this part.

(11) During the correlation testing runs of the CEMS required by Performance Specification 11 in appendix B of this part, PM and O_2 (or CO_2) data shall be collected concurrently (or within a 30-to 60-minute period) by both the continuous emission monitors and performance tests conducted using the following test methods.

(i) For PM, Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part shall be used; and

(ii) For O_2 (or CO_2), Method 3A or 3B of appendix A-2 of this part, as applicable shall be used.

(12) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 2 in appendix F of this part. Relative Response Audit's must be performed annually and Response Correlation Audits must be performed every 3 years.

(13) When PM emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or EPA Reference Method 19 of appendix A of this part to provide, as necessary, valid emissions data for a minimum of 75 percent of total operating hours per 30-day rolling average.

(14) As of January 1, 2012, and within 90 days after the date of completing each performance test, as defined in § 60.8, conducted to demonstrate compliance with this subpart, you must submit relative accuracy test audit (*i.e.,* reference method) data and performance test (*i.e.,* compliance test) data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/ert_tool.html/*) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5086, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9460, Feb. 16, 2012]

§ 60.47b Emission monitoring for sulfur dioxide.

(a) Except as provided in paragraphs (b) and (f) of this section, the owner or operator of an affected facility subject to the SO_2 standards in § 60.42b shall install, calibrate, maintain, and operate CEMS for measuring SO_2 concentrations and either O_2 or CO_2 concentrations and shall record the output of the systems. For units complying with the percent reduction standard, the SO_2 and either O_2 or CO_2 concentrations shall both be monitored at the inlet and outlet of the SO_2 control device. If the owner or operator has installed and certified SO_2 and O_2 or CO_2 CEMS according to the requirements of § 75.20(c)(1) of this chapter and appendix A to part 75 of this chapter, and is continuing to meet the ongoing quality assurance requirements of § 75.21 of this chapter and appendix B to part 75 of this chapter, those CEMS may be used to meet the requirements of this section, provided that:

(1) When relative accuracy testing is conducted, SO_2 concentration data and CO_2 (or O_2) data are collected simultaneously; and

(2) In addition to meeting the applicable SO_2 and CO_2 (or O_2) relative accuracy specifications in Figure 2 of appendix B to part 75 of this chapter, the relative accuracy (RA) standard in section 13.2 of Performance Specification 2 in appendix B to this part is met when the RA is calculated on a lb/MMBtu basis; and

(3) The reporting requirements of § 60.49b are met. SO_2 and CO_2 (or O_2) data used to meet the requirements of § 60.49b shall not include substitute data values derived from the missing data procedures in subpart D of part 75 of this chapter, nor shall the SO_2 data have been bias adjusted according to the procedures of part 75 of this chapter.

(b) As an alternative to operating CEMS as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2 emissions and percent reduction by:

(1) Collecting coal or oil samples in an as-fired condition at the inlet to the steam generating unit and analyzing them for sulfur and heat content according to Method 19 of appendix A of this part. Method 19 of appendix A of this part provides procedures for converting these measurements into the format to be used in calculating the average SO_2 input rate, or

(2) Measuring SO_2 according to Method 6B of appendix A of this part at the inlet or outlet to the SO_2 control system. An initial stratification test is required to verify the adequacy of the Method 6B of appendix A of this part sampling location. The stratification test shall consist of three paired runs of a suitable SO_2 and CO_2 measurement train operated at the candidate location and a second similar train operated according to the procedures in section 3.2 and the applicable procedures in section 7 of Performance Specification 2. Method 6B of appendix A of this part, Method 6A of appendix A of this part, or a combination of Methods 6 and 3 or 3B of appendix A of this part or Methods 6C and 3A of appendix A of this part are suitable measurement techniques. If Method 6B of appendix A of this part is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B of appendix A of this part 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent.

(3) A daily SO_2 emission rate, E_D , shall be determined using the procedure described in Method 6A of appendix A of this part, section 7.6.2 (Equation 6A-8) and stated in ng/J (lb/MMBtu) heat input.

(4) The mean 30-day emission rate is calculated using the daily measured values in ng/J (lb/MMBtu) for 30 successive steam generating unit operating days using equation 19-20 of Method 19 of appendix A of this part.

(c) The owner or operator of an affected facility shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive boiler operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator or the reference methods and procedures as described in paragraph (b) of this section.

(d) The 1-hour average SO_2 emission rates measured by the CEMS required by paragraph (a) of this section and required under § 60.13(h) is expressed in ng/J or lb/MMBtu heat input and is used to calculate the average emission rates under § 60.42(b). Each 1-hour average SO_2 emission rate must be based on 30 or more minutes of steam generating unit operation. The hourly averages shall be calculated according to § 60.13(h)(2). Hourly SO_2 emission rates are not calculated if the affected facility is operated less than 30 minutes in a given clock hour and are not counted toward determination of a steam generating unit operating day.

(e) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(1) Except as provided for in paragraph (e)(4) of this section, all CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 of appendix B of this part.

(2) Except as provided for in paragraph (e)(4) of this section, quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 of appendix F of this part.

(3) For affected facilities combusting coal or oil, alone or in combination with other fuels, the span value of the SO_2 CEMS at the inlet to the SO_2 control device is 125 percent of the maximum estimated hourly potential SO_2 emissions of the fuel combusted, and the span value of the CEMS at the outlet to the SO_2 control device is 50 percent of the maximum estimated hourly potential SO_2 emissions of the fuel combusted. Alternatively, SO_2 span values determined according to section 2.1.1 in appendix A to part 75 of this chapter may be used.

(4) As an alternative to meeting the requirements of requirements of paragraphs (e)(1) and (e)(2) of this section, the owner or operator may elect to implement the following alternative data accuracy assessment procedures:

(i) For all required CO_2 and O_2 monitors and for SO_2 and NO_x monitors with span values greater than or equal to 100 ppm, the daily calibration error test and calibration adjustment procedures described in sections 2.1.1 and 2.1.3 of appendix B to part 75 of this chapter may be followed instead of the CD assessment procedures in Procedure 1, section 4.1 of appendix F to this part.

(ii) For all required CO_2 and O_2 monitors and for SO_2 and NO_x monitors with span values greater than 30 ppm, quarterly linearity checks may be performed in accordance with section 2.2.1 of appendix B to part 75 of this chapter, instead of performing the cylinder gas audits (CGAs) described in Procedure 1, section 5.1.2 of appendix F to this part. If this option is selected: The frequency of the linearity checks shall be as specified in section 2.2.1 of appendix B to part 75 of this chapter; the applicable linearity specifications in section 3.2 of appendix A to part 75 of this chapter shall be met; the data validation and out-of-control criteria in section 2.2.3 of appendix B to part 75 of this chapter shall be followed instead of the excessive audit inaccuracy and out-of-control criteria in Procedure 1, section 5.2 of appendix F to this part; and the grace period provisions in section 2.2.4 of appendix B to part 75 of this chapter shall apply. For the purposes of data validation under this subpart, the cylinder gas audits described in Procedure 1, section 5.1.2 of appendix F to this part shall be performed for SO_2 and NO_x span values less than or equal to 30 ppm; and

(iii) For SO_2 , CO_2 , and O_2 monitoring systems and for NO_x emission rate monitoring systems, RATAs may be performed in accordance with section 2.3 of appendix B to part 75 of this chapter instead of following the procedures described in Procedure 1, section 5.1.1 of appendix F to this part. If this option is selected: The frequency of each RATA shall be as specified in section 2.3.1 of appendix B to part 75 of this chapter; the applicable relative accuracy specifications shown in Figure 2 in appendix B to part 75 of this chapter shall be met; the data validation and out-of-control criteria in section 2.3.2 of appendix B to part 75 of this chapter shall be followed instead of the excessive audit inaccuracy and out-of-control criteria in Procedure 1, section 5.2 of appendix F to this part; and the grace period provisions in section 2.3.3 of appendix B to part 75 of this chapter shall apply. For the purposes of data validation under this subpart, the relative accuracy specification in section 13.2 of Performance Specification 2 in appendix B to this part shall be met on a lb/MMBtu basis for SO_2 (regardless of the SO_2 emission level during the RATA), and for NO_x when the average NO_x emission rate measured by the reference method during the RATA is less than 0.100 lb/MMBtu.

(f) The owner or operator of an affected facility that combusts very low sulfur oil or is demonstrating compliance under § 60.45b(k) is not subject to the emission monitoring requirements under paragraph (a) of this section if the owner or operator maintains fuel records as described in § 60.49b(r).

[72 FR 32742, June 13, 2007, as amended at 74 FR 5087, Jan. 28, 2009]

§ 60.48b Emission monitoring for particulate matter and nitrogen oxides.

(a) Except as provided in paragraph (j) of this section, the owner or operator of an affected facility subject to the opacity standard under § 60.43b shall install, calibrate, maintain, and operate a continuous opacity monitoring systems (COMS) for measuring the opacity of emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility subject to an opacity standard under § 60.43b and meeting the conditions under paragraphs (j)(1), (2), (3), (4), (5), or (6) of this section who elects not to use a COMS shall conduct a performance test using Method 9 of appendix A-4 of this part and the procedures in § 60.11 to demonstrate compliance with the applicable limit in § 60.43b by April 29, 2011, within 45 days of stopping use of an existing COMS, or within 180 days after initial startup of the facility, whichever is later, and shall comply with either paragraphs (a)(1), (a)(2), or (a)(3) of this section. The observation period for Method 9 of appendix A-4 of this part performance tests may be reduced from 3 hours to 60 minutes if all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent during the initial 60 minutes of observation.

(1) Except as provided in paragraph (a)(2) and (a)(3) of this section, the owner or operator shall conduct subsequent Method 9 of appendix A-4 of this part performance tests using the procedures in paragraph (a) of this section according to the applicable schedule in paragraphs (a)(1)(i) through (a)(1)(iv) of this section, as determined by the most recent Method 9 of appendix A-4 of this part performance test results.

(i) If no visible emissions are observed, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 12 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;

(ii) If visible emissions are observed but the maximum 6-minute average opacity is less than or equal to 5 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 6 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;

(iii) If the maximum 6-minute average opacity is greater than 5 percent but less than or equal to 10 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 3 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later; or

(iv) If the maximum 6-minute average opacity is greater than 10 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 45 calendar days from the date that the most recent performance test was conducted.

(2) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A-4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A-4 of this part performance tests, elect to perform subsequent monitoring using Method 22 of appendix A-7 of this part according to the procedures specified in paragraphs (a)(2)(i) and (ii) of this section.

(i) The owner or operator shall conduct 10 minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using Method 22 of appendix A-7 of this part and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (*i.e.* , 30 seconds per 10 minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10 minute observation, immediately conduct a 30 minute observation. If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (*i.e.,* 90 seconds per 30 minute period), the owner or operator shall either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30 minute observation (*i.e.,* 90 seconds) or conduct a new Method 9 of appendix A-4 of this part performance test using the procedures in paragraph (a) of this section within 45 calendar days according to the requirements in § 60.46d(d)(7).

(ii) If no visible emissions are observed for 10 operating days during which an opacity standard is applicable, observations can be reduced to once every 7 operating days during which an opacity standard is applicable. If any visible emissions are observed, daily observations shall be resumed.

(3) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A-4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A-4 performance tests, elect to perform subsequent monitoring using a digital opacity compliance system according to a site-specific monitoring plan approved by the Administrator. The observations shall be similar, but not necessarily identical, to the requirements in paragraph (a)(2) of this section. For reference purposes in preparing the monitoring plan, see OAQPS "Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems." This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Policy Group (D243-02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods.

(b) Except as provided under paragraphs (g), (h), and (i) of this section, the owner or operator of an affected facility subject to a NO_x standard under § 60.44b shall comply with either paragraphs (b)(1) or (b)(2) of this section.

(1) Install, calibrate, maintain, and operate CEMS for measuring NO_x and O_2 (or CO_2) emissions discharged to the atmosphere, and shall record the output of the system; or

(2) If the owner or operator has installed a NO_x emission rate CEMS to meet the requirements of part 75 of this chapter and is continuing to meet the ongoing requirements of part 75 of this chapter, that CEMS may be used to meet the requirements of this section, except that the owner or operator shall also meet the requirements of § 60.49b. Data reported to meet the requirements of § 60.49b shall not include data substituted using the missing data procedures in subpart D of part 75 of this chapter, nor shall the data have been bias adjusted according to the procedures of part 75 of this chapter.

(c) The CEMS required under paragraph (b) of this section shall be operated and data recorded during all periods of operation of the affected facility except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(d) The 1-hour average NO_x emission rates measured by the continuous NO_x monitor required by paragraph (b) of this section and required under § 60.13(h) shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the average emission rates under § 60.44b. The 1-hour averages shall be calculated using the data points required under § 60.13(h)(2).

(e) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems.

(1) For affected facilities combusting coal, wood or municipal-type solid waste, the span value for a COMS shall be between 60 and 80 percent.

(2) For affected facilities combusting coal, oil, or natural gas, the span value for NO_x is determined using one of the following procedures:

(i) Except as provided under paragraph (e)(2)(ii) of this section, NO_x span values shall be determined as follows:

Fuel	**Span values for NO_X (ppm)**
Natural gas	500.
Oil	500.
Coal	1,000.
Mixtures	500 (x + y) + 1,000z.

Where:

x = Fraction of total heat input derived from natural gas;

y = Fraction of total heat input derived from oil; and

z = Fraction of total heat input derived from coal.

(ii) As an alternative to meeting the requirements of paragraph (e)(2)(i) of this section, the owner or operator of an affected facility may elect to use the NO_x span values determined according to section 2.1.2 in appendix A to part 75 of this chapter.

(3) All span values computed under paragraph (e)(2)(i) of this section for combusting mixtures of regulated fuels are rounded to the nearest 500 ppm. Span values computed under paragraph (e)(2)(ii) of this section shall be rounded off according to section 2.1.2 in appendix A to part 75 of this chapter.

(f) When NO_x emission data are not obtained because of CEMS breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7 of appendix A of this part, Method 7A of appendix A of this part, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.

(g) The owner or operator of an affected facility that has a heat input capacity of 73 MW (250 MMBtu/hr) or less, and that has an annual capacity factor for residual oil having a nitrogen content of 0.30 weight percent or less, natural gas, distillate oil, gasified coal, or any mixture of these fuels, greater than 10 percent (0.10) shall:

(1) Comply with the provisions of paragraphs (b), (c), (d), (e)(2), (e)(3), and (f) of this section; or

(2) Monitor steam generating unit operating conditions and predict NO_x emission rates as specified in a plan submitted pursuant to § 60.49b(c).

(h) The owner or operator of a duct burner, as described in § 60.41b, that is subject to the NO_x standards in § 60.44b(a)(4), § 60.44b(e), or § 60.44b(l) is not required to install or operate a continuous emissions monitoring system to measure NO_x emissions.

(i) The owner or operator of an affected facility described in § 60.44b(j) or § 60.44b(k) is not required to install or operate a CEMS for measuring NO_x emissions.

(j) The owner or operator of an affected facility that meets the conditions in either paragraph (j)(1), (2), (3), (4), (5), (6), or (7) of this section is not required to install or operate a COMS if:

(1) The affected facility uses a PM CEMS to monitor PM emissions; or

(2) The affected facility burns only liquid (excluding residual oil) or gaseous fuels with potential SO_2 emissions rates of 26 ng/J (0.060 lb/MMBtu) or less and does not use a post-combustion technology to reduce SO_2 or PM emissions. The owner or operator must maintain fuel records of the sulfur content of the fuels burned, as described under § 60.49b(r); or

(3) The affected facility burns coke oven gas alone or in combination with fuels meeting the criteria in paragraph (j)(2) of this section and does not use a post-combustion technology to reduce SO_2 or PM emissions; or

(4) The affected facility does not use post-combustion technology (except a wet scrubber) for reducing PM, SO_2 , or carbon monoxide (CO) emissions, burns only gaseous fuels or fuel oils that contain less than or equal to 0.30 weight percent sulfur, and is operated such that emissions of CO to the atmosphere from the affected facility are maintained at levels less than or equal to 0.15 lb/MMBtu on a steam generating unit operating day average basis. Owners and operators of affected facilities electing to comply with this paragraph must demonstrate compliance according to the procedures specified in paragraphs (j)(4)(i) through (iv) of this section; or

(i) You must monitor CO emissions using a CEMS according to the procedures specified in paragraphs (j)(4)(i)(A) through (D) of this section.

(A) The CO CEMS must be installed, certified, maintained, and operated according to the provisions in § 60.58b(i)(3) of subpart Eb of this part.

(B) Each 1-hour CO emissions average is calculated using the data points generated by the CO CEMS expressed in parts per million by volume corrected to 3 percent oxygen (dry basis).

(C) At a minimum, valid 1-hour CO emissions averages must be obtained for at least 90 percent of the operating hours on a 30-day rolling average basis. The 1-hour averages are calculated using the data points required in § 60.13(h)(2).

(D) Quarterly accuracy determinations and daily calibration drift tests for the CO CEMS must be performed in accordance with procedure 1 in appendix F of this part.

(ii) You must calculate the 1-hour average CO emissions levels for each steam generating unit operating day by multiplying the average hourly CO output concentration measured by the CO CEMS times the corresponding average hourly flue gas flow rate and divided by the corresponding average hourly heat input to the affected source. The 24-hour average CO emission level is determined by calculating the arithmetic average of the hourly CO emission levels computed for each steam generating unit operating day.

(iii) You must evaluate the preceding 24-hour average CO emission level each steam generating unit operating day excluding periods of affected source startup, shutdown, or malfunction. If the 24-hour average CO emission level is greater than 0.15 lb/MMBtu, you must initiate investigation of the relevant equipment and control systems within 24 hours of the first discovery of the high emission incident and, take the appropriate corrective action as soon as practicable to adjust control settings or repair equipment to reduce the 24-hour average CO emission level to 0.15 lb/MMBtu or less.

(iv) You must record the CO measurements and calculations performed according to paragraph (j)(4) of this section and any corrective actions taken. The record of corrective action taken must include the date and time during which the 24-hour average CO emission level was greater than 0.15 lb/MMBtu, and the date, time, and description of the corrective action.

(5) The affected facility uses a bag leak detection system to monitor the performance of a fabric filter (baghouse) according to the most current requirements in section § 60.48Da of this part; or

(6) The affected facility uses an ESP as the primary PM control device and uses an ESP predictive model to monitor the performance of the ESP developed in accordance and operated according to the most current requirements in section § 60.48Da of this part; or

(7) The affected facility burns only gaseous fuels or fuel oils that contain less than or equal to 0.30 weight percent sulfur and operates according to a written site-specific monitoring plan approved by the permitting authority. This monitoring plan must include procedures and criteria for establishing and monitoring specific parameters for the affected facility indicative of compliance with the opacity standard.

(k) Owners or operators complying with the PM emission limit by using a PM CEMS must calibrate, maintain, operate, and record the output of the system for PM emissions discharged to the atmosphere as specified in § 60.46b(j). The CEMS specified in paragraph § 60.46b(j) shall be operated and data recorded during all periods of operation of the affected facility except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(l) An owner or operator of an affected facility that is subject to an opacity standard under § 60.43b(f) is not required to operate a COMS provided that the unit burns only gaseous fuels and/or liquid fuels (excluding residue oil) with a potential SO_2 emissions rate no greater than 26 ng/J (0.060 lb/MMBtu), and the unit operates according to a written site-specific monitoring plan approved by the permitting authority is not required to operate a COMS. This monitoring plan must include procedures and criteria for establishing and monitoring specific parameters for the affected facility indicative of compliance with the opacity standard. For testing performed as part of this site-specific monitoring plan, the permitting authority may require as an alternative to the notification and reporting requirements specified in §§ 60.8 and 60.11 that the owner or operator submit any deviations with the excess emissions report required under § 60.49b(h).

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§ 60.49b Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of initial startup, as provided by § 60.7. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility;

(2) If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under §§ 60.42b(d)(1), 60.43b(a)(2), (a)(3)(iii), (c)(2)(ii), (d)(2)(iii), 60.44b(c), (d), (e), (i), (j), (k), 60.45b(d), (g), 60.46b(h), or 60.48b(i);

(3) The annual capacity factor at which the owner or operator anticipates operating the facility based on all fuels fired and based on each individual fuel fired; and

(4) Notification that an emerging technology will be used for controlling emissions of SO_2 . The Administrator will examine the description of the emerging technology and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of § 60.42b(a) unless and until this determination is made by the Administrator.

(b) The owner or operator of each affected facility subject to the SO_2 , PM, and/or NO_x emission limits under §§ 60.42b, 60.43b, and 60.44b shall submit to the Administrator the performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in appendix B of this part. The owner or operator of each affected facility described in § 60.44b(j) or § 60.44b(k) shall submit to the Administrator the maximum heat input capacity data from the demonstration of the maximum heat input capacity of the affected facility.

(c) The owner or operator of each affected facility subject to the NO_x standard in § 60.44b who seeks to demonstrate compliance with those standards through the monitoring of steam generating unit operating conditions in the provisions of § 60.48b(g)(2) shall submit to the Administrator for approval a plan that identifies the operating conditions to be monitored in § 60.48b(g)(2) and the records to be maintained in § 60.49b(g). This plan shall be submitted to the Administrator for approval within 360 days of the initial startup of the affected facility. An affected facility burning coke oven gas alone or in combination with other gaseous fuels or distillate oil shall submit this plan to the Administrator for approval within 360 days of the initial startup of the affected facility or by November 30, 2009, whichever date comes later. If the plan is approved, the owner or operator shall maintain records of predicted nitrogen oxide emission rates and the monitored operating conditions, including steam generating unit load, identified in the plan. The plan shall:

(1) Identify the specific operating conditions to be monitored and the relationship between these operating conditions and NO_x emission rates (*i.e.* , ng/J or lbs/MMBtu heat input). Steam generating unit operating conditions include, but are not limited to, the degree of staged combustion (*i.e.* , the ratio of primary air to secondary and/or tertiary air) and the level of excess air (*i.e.* , flue gas O_2 level);

(2) Include the data and information that the owner or operator used to identify the relationship between NO_x emission rates and these operating conditions; and

(3) Identify how these operating conditions, including steam generating unit load, will be monitored under § 60.48b(g) on an hourly basis by the owner or operator during the period of operation of the affected facility; the quality assurance procedures or practices that will be employed to ensure that the data generated by monitoring these operating conditions will be representative and accurate; and the type and format of the records of these operating conditions, including steam generating unit load, that will be maintained by the owner or operator under § 60.49b(g).

(d) Except as provided in paragraph (d)(2) of this section, the owner or operator of an affected facility shall record and maintain records as specified in paragraph (d)(1) of this section.

(1) The owner or operator of an affected facility shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste for the reporting period. The

annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

(2) As an alternative to meeting the requirements of paragraph (d)(1) of this section, the owner or operator of an affected facility that is subject to a federally enforceable permit restricting fuel use to a single fuel such that the facility is not required to continuously monitor any emissions (excluding opacity) or parameters indicative of emissions may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

(e) For an affected facility that combusts residual oil and meets the criteria under §§ 60.46b(e)(4), 60.44b(j), or (k), the owner or operator shall maintain records of the nitrogen content of the residual oil combusted in the affected facility and calculate the average fuel nitrogen content for the reporting period. The nitrogen content shall be determined using ASTM Method D4629 (incorporated by reference, see § 60.17), or fuel suppliers. If residual oil blends are being combusted, fuel nitrogen specifications may be prorated based on the ratio of residual oils of different nitrogen content in the fuel blend.

(f) For an affected facility subject to the opacity standard in § 60.43b, the owner or operator shall maintain records of opacity. In addition, an owner or operator that elects to monitor emissions according to the requirements in § 60.48b(a) shall maintain records according to the requirements specified in paragraphs (f)(1) through (3) of this section, as applicable to the visible emissions monitoring method used.

(1) For each performance test conducted using Method 9 of appendix A-4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (f)(1)(i) through (iii) of this section.

(i) Dates and time intervals of all opacity observation periods;

(ii) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and

(iii) Copies of all visible emission observer opacity field data sheets;

(2) For each performance test conducted using Method 22 of appendix A-4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (f)(2)(i) through (iv) of this section.

(i) Dates and time intervals of all visible emissions observation periods;

(ii) Name and affiliation for each visible emission observer participating in the performance test;

(iii) Copies of all visible emission observer opacity field data sheets; and

(iv) Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements.

(3) For each digital opacity compliance system, the owner or operator shall maintain records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator.

(g) Except as provided under paragraph (p) of this section, the owner or operator of an affected facility subject to the NO_x standards under § 60.44b shall maintain records of the following information for each steam generating unit operating day:

(1) Calendar date;

(2) The average hourly NO_x emission rates (expressed as NO_2) (ng/J or lb/MMBtu heat input) measured or predicted;

(3) The 30-day average NO_x emission rates (ng/J or lb/MMBtu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days;

(4) Identification of the steam generating unit operating days when the calculated 30-day average NO_x emission rates are in excess of the NO_x emissions standards under § 60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken;

(5) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken;

(6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data;

(7) Identification of “F” factor used for calculations, method of determination, and type of fuel combusted;

(8) Identification of the times when the pollutant concentration exceeded full span of the CEMS;

(9) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3; and

(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part.

(h) The owner or operator of any affected facility in any category listed in paragraphs (h)(1) or (2) of this section is required to submit excess emission reports for any excess emissions that occurred during the reporting period.

(1) Any affected facility subject to the opacity standards in § 60.43b(f) or to the operating parameter monitoring requirements in § 60.13(i)(1).

(2) Any affected facility that is subject to the NO_x standard of § 60.44b, and that:

(i) Combusts natural gas, distillate oil, gasified coal, or residual oil with a nitrogen content of 0.3 weight percent or less; or

(ii) Has a heat input capacity of 73 MW (250 MMBtu/hr) or less and is required to monitor NO_x emissions on a continuous basis under § 60.48b(g)(1) or steam generating unit operating conditions under § 60.48b(g)(2).

(3) For the purpose of § 60.43b, excess emissions are defined as all 6-minute periods during which the average opacity exceeds the opacity standards under § 60.43b(f).

(4) For purposes of § 60.48b(g)(1), excess emissions are defined as any calculated 30-day rolling average NO_x emission rate, as determined under § 60.46b(e), that exceeds the applicable emission limits in § 60.44b.

(i) The owner or operator of any affected facility subject to the continuous monitoring requirements for NO_x under § 60.48(b) shall submit reports containing the information recorded under paragraph (g) of this section.

(j) The owner or operator of any affected facility subject to the SO_2 standards under § 60.42b shall submit reports.

(k) For each affected facility subject to the compliance and performance testing requirements of § 60.45b and the reporting requirement in paragraph (j) of this section, the following information shall be reported to the Administrator:

(1) Calendar dates covered in the reporting period;

(2) Each 30-day average SO_2 emission rate (ng/J or lb/MMBtu heat input) measured during the reporting period, ending with the last 30-day period; reasons for noncompliance with the emission standards; and a description of corrective actions taken; For an exceedance due to maintenance of the SO_2 control system covered in paragraph 60.45b(a), the report shall identify the days on which the maintenance was performed and a description of the maintenance;

(3) Each 30-day average percent reduction in SO_2 emissions calculated during the reporting period, ending with the last 30-day period; reasons for noncompliance with the emission standards; and a description of corrective actions taken;

(4) Identification of the steam generating unit operating days that coal or oil was combusted and for which SO_2 or diluent (O_2 or CO_2) data have not been obtained by an approved method for at least 75 percent of the operating hours in the steam generating unit operating day; justification for not obtaining sufficient data; and description of corrective action taken;

(5) Identification of the times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and description of corrective action taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit;

(6) Identification of “F” factor used for calculations, method of determination, and type of fuel combusted;

(7) Identification of times when hourly averages have been obtained based on manual sampling methods;

(8) Identification of the times when the pollutant concentration exceeded full span of the CEMS;

(9) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3;

(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part; and

(11) The annual capacity factor of each fired as provided under paragraph (d) of this section.

(l) For each affected facility subject to the compliance and performance testing requirements of § 60.45b(d) and the reporting requirements of paragraph (j) of this section, the following information shall be reported to the Administrator:

(1) Calendar dates when the facility was in operation during the reporting period;

(2) The 24-hour average SO_2 emission rate measured for each steam generating unit operating day during the reporting period that coal or oil was combusted, ending in the last 24-hour period in the quarter; reasons for noncompliance with the emission standards; and a description of corrective actions taken;

(3) Identification of the steam generating unit operating days that coal or oil was combusted for which $S0_2$ or diluent (O_2 or CO_2) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and description of corrective action taken;

(4) Identification of the times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and description of corrective action taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit;

(5) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted;

(6) Identification of times when hourly averages have been obtained based on manual sampling methods;

(7) Identification of the times when the pollutant concentration exceeded full span of the CEMS;

(8) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3; and

(9) Results of daily CEMS drift tests and quarterly accuracy assessments as required under Procedure 1 of appendix F 1 of this part. If the owner or operator elects to implement the alternative data assessment procedures described in §§ 60.47b(e)(4)(i) through (e)(4)(iii), each data assessment report shall include a summary of the results of all of the RATAs, linearity checks, CGAs, and calibration error or drift assessments required by §§ 60.47b(e)(4)(i) through (e)(4)(iii).

(m) For each affected facility subject to the SO_2 standards in § 60.42(b) for which the minimum amount of data required in § 60.47b(c) were not obtained during the reporting period, the following information is reported to the Administrator in addition to that required under paragraph (k) of this section:

(1) The number of hourly averages available for outlet emission rates and inlet emission rates;

(2) The standard deviation of hourly averages for outlet emission rates and inlet emission rates, as determined in Method 19 of appendix A of this part, section 7;

(3) The lower confidence limit for the mean outlet emission rate and the upper confidence limit for the mean inlet emission rate, as calculated in Method 19 of appendix A of this part, section 7; and

(4) The ratio of the lower confidence limit for the mean outlet emission rate and the allowable emission rate, as determined in Method 19 of appendix A of this part, section 7.

(n) If a percent removal efficiency by fuel pretreatment (*i.e.* , $\%R_f$) is used to determine the overall percent reduction (*i.e.* , $\%R_o$) under § 60.45b, the owner or operator of the affected facility shall submit a signed statement with the report.

(1) Indicating what removal efficiency by fuel pretreatment (*i.e.* , $\%R_f$) was credited during the reporting period;

(2) Listing the quantity, heat content, and date each pre-treated fuel shipment was received during the reporting period, the name and location of the fuel pretreatment facility; and the total quantity and total heat content of all fuels received at the affected facility during the reporting period;

(3) Documenting the transport of the fuel from the fuel pretreatment facility to the steam generating unit; and

(4) Including a signed statement from the owner or operator of the fuel pretreatment facility certifying that the percent removal efficiency achieved by fuel pretreatment was determined in accordance with the provisions of Method 19 of appendix A of this part and listing the heat content and sulfur content of each fuel before and after fuel pretreatment.

(o) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of 2 years following the date of such record.

(p) The owner or operator of an affected facility described in § 60.44b(j) or (k) shall maintain records of the following information for each steam generating unit operating day:

(1) Calendar date;

(2) The number of hours of operation; and

(3) A record of the hourly steam load.

(q) The owner or operator of an affected facility described in § 60.44b(j) or § 60.44b(k) shall submit to the Administrator a report containing:

(1) The annual capacity factor over the previous 12 months;

(2) The average fuel nitrogen content during the reporting period, if residual oil was fired; and

(3) If the affected facility meets the criteria described in § 60.44b(j), the results of any NO_x emission tests required during the reporting period, the hours of operation during the reporting period, and the hours of operation since the last NO_x emission test.

(r) The owner or operator of an affected facility who elects to use the fuel based compliance alternatives in § 60.42b or § 60.43b shall either:

(1) The owner or operator of an affected facility who elects to demonstrate that the affected facility combusts only very low sulfur oil, natural gas, wood, a mixture of these fuels, or any of these fuels (or a mixture of these fuels) in combination with other fuels that are known to contain an insignificant amount of sulfur in § 60.42b(j) or § 60.42b(k) shall obtain and maintain at the affected facility fuel receipts (such as a current, valid purchase contract, tariff sheet, or transportation contract) from the fuel supplier that certify that the oil meets the definition of distillate oil and gaseous fuel meets the definition of natural gas as defined in § 60.41b and the applicable sulfur limit. For the purposes of this section, the distillate oil need not meet the fuel nitrogen content specification in the definition of distillate oil. Reports shall be submitted

to the Administrator certifying that only very low sulfur oil meeting this definition, natural gas, wood, and/or other fuels that are known to contain insignificant amounts of sulfur were combusted in the affected facility during the reporting period; or

(2) The owner or operator of an affected facility who elects to demonstrate compliance based on fuel analysis in § 60.42b or § 60.43b shall develop and submit a site-specific fuel analysis plan to the Administrator for review and approval no later than 60 days before the date you intend to demonstrate compliance. Each fuel analysis plan shall include a minimum initial requirement of weekly testing and each analysis report shall contain, at a minimum, the following information:

(i) The potential sulfur emissions rate of the representative fuel mixture in ng/J heat input;

(ii) The method used to determine the potential sulfur emissions rate of each constituent of the mixture. For distillate oil and natural gas a fuel receipt or tariff sheet is acceptable;

(iii) The ratio of different fuels in the mixture; and

(iv) The owner or operator can petition the Administrator to approve monthly or quarterly sampling in place of weekly sampling.

(s) Facility specific NO_x standard for Cytec Industries Fortier Plant's C.AOG incinerator located in Westwego, Louisiana:

(1) *Definitions* .

Oxidation zone is defined as the portion of the C.AOG incinerator that extends from the inlet of the oxidizing zone combustion air to the outlet gas stack.

Reducing zone is defined as the portion of the C.AOG incinerator that extends from the burner section to the inlet of the oxidizing zone combustion air.

Total inlet air is defined as the total amount of air introduced into the C.AOG incinerator for combustion of natural gas and chemical by-product waste and is equal to the sum of the air flow into the reducing zone and the air flow into the oxidation zone.

(2) *Standard for nitrogen oxides* . (i) When fossil fuel alone is combusted, the NO_x emission limit for fossil fuel in § 60.44b(a) applies.

(ii) When natural gas and chemical by-product waste are simultaneously combusted, the NO_x emission limit is 289 ng/J (0.67 lb/MMBtu) and a maximum of 81 percent of the total inlet air provided for combustion shall be provided to the reducing zone of the C.AOG incinerator.

(3) *Emission monitoring* . (i) The percent of total inlet air provided to the reducing zone shall be determined at least every 15 minutes by measuring the air flow of all the air entering the reducing zone and the air flow of all the air entering the oxidation zone, and compliance with the percentage of total inlet air that is provided to the reducing zone shall be determined on a 3-hour average basis.

(ii) The NO_x emission limit shall be determined by the compliance and performance test methods and procedures for NO_x in § 60.46b(i).

(iii) The monitoring of the NO_x emission limit shall be performed in accordance with § 60.48b.

(4) *Reporting and recordkeeping requirements* . (i) The owner or operator of the C.AOG incinerator shall submit a report on any excursions from the limits required by paragraph (a)(2) of this section to the Administrator with the quarterly report required by paragraph (i) of this section.

(ii) The owner or operator of the C.AOG incinerator shall keep records of the monitoring required by paragraph (a)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner of operator of the C.AOG incinerator shall perform all the applicable reporting and recordkeeping requirements of this section.

(t) Facility-specific NO_x standard for Rohm and Haas Kentucky Incorporated's Boiler No. 100 located in Louisville, Kentucky:

(1) *Definitions* .

Air ratio control damper is defined as the part of the low NO_x burner that is adjusted to control the split of total combustion air delivered to the reducing and oxidation portions of the combustion flame.

Flue gas recirculation line is defined as the part of Boiler No. 100 that recirculates a portion of the boiler flue gas back into the combustion air.

(2) *Standard for nitrogen oxides* . (i) When fossil fuel alone is combusted, the NO_x emission limit for fossil fuel in § 60.44b(a) applies.

(ii) When fossil fuel and chemical by-product waste are simultaneously combusted, the NO_x emission limit is 473 ng/J (1.1 lb/MMBtu), and the air ratio control damper tee handle shall be at a minimum of 5 inches (12.7 centimeters) out of the boiler, and the flue gas recirculation line shall be operated at a minimum of 10 percent open as indicated by its valve opening position indicator.

(3) *Emission monitoring for nitrogen oxides* . (i) The air ratio control damper tee handle setting and the flue gas recirculation line valve opening position indicator setting shall be recorded during each 8-hour operating shift.

(ii) The NO_x emission limit shall be determined by the compliance and performance test methods and procedures for NO_x in § 60.46b.

(iii) The monitoring of the NO_x emission limit shall be performed in accordance with § 60.48b.

(4) *Reporting and recordkeeping requirements* . (i) The owner or operator of Boiler No. 100 shall submit a report on any excursions from the limits required by paragraph (b)(2) of this section to the Administrator with the quarterly report required by § 60.49b(i).

(ii) The owner or operator of Boiler No. 100 shall keep records of the monitoring required by paragraph (b)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner of operator of Boiler No. 100 shall perform all the applicable reporting and recordkeeping requirements of § 60.49b.

(u) *Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia* . (1) This paragraph (u) applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia ("site") and only to the natural gas-fired boilers installed as part of the powerhouse conversion required pursuant to 40 CFR 52.2454(g). The requirements of this paragraph shall apply, and the requirements of §§ 60.40b through 60.49b(t) shall not apply, to the natural gas-fired boilers installed pursuant to 40 CFR 52.2454(g).

(i) The site shall equip the natural gas-fired boilers with low NO_x technology.

(ii) The site shall install, calibrate, maintain, and operate a continuous monitoring and recording system for measuring NO_x emissions discharged to the atmosphere and opacity using a continuous emissions monitoring system or a predictive emissions monitoring system.

(iii) Within 180 days of the completion of the powerhouse conversion, as required by 40 CFR 52.2454, the site shall perform a performance test to quantify criteria pollutant emissions.

(2) [Reserved]

(v) The owner or operator of an affected facility may submit electronic quarterly reports for SO_2 and/or NO_x and/or opacity in lieu of submitting the written reports required under paragraphs (h), (i), (j), (k) or (l) of this section. The format of each quarterly electronic report shall be coordinated with the permitting authority. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of this subpart was achieved during the reporting period. Before submitting reports in the electronic format, the owner or operator shall coordinate with the permitting authority to obtain their agreement to submit reports in this alternative format.

(w) The reporting period for the reports required under this subpart is each 6 month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

(x) Facility-specific NO_x standard for Weyerhaeuser Company's No. 2 Power Boiler located in New Bern, North Carolina:

(1) *Standard for nitrogen oxides* . (i) When fossil fuel alone is combusted, the NO_x emission limit for fossil fuel in § 60.44b(a) applies.

(ii) When fossil fuel and chemical by-product waste are simultaneously combusted, the NO_x emission limit is 215 ng/J (0.5 lb/MMBtu).

(2) *Emission monitoring for nitrogen oxides* . (i) The NO_x emissions shall be determined by the compliance and performance test methods and procedures for NO_x in § 60.46b.

(ii) The monitoring of the NO_x emissions shall be performed in accordance with § 60.48b.

(3) *Reporting and recordkeeping requirements* . (i) The owner or operator of the No. 2 Power Boiler shall submit a report on any excursions from the limits required by paragraph (x)(2) of this section to the Administrator with the quarterly report required by § 60.49b(i).

(ii) The owner or operator of the No. 2 Power Boiler shall keep records of the monitoring required by paragraph (x)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner or operator of the No. 2 Power Boiler shall perform all the applicable reporting and recordkeeping requirements of § 60.49b.

(y) Facility-specific NO_x standard for INEOS USA's AOGI located in Lima, Ohio:

(1) *Standard for NO_x*. (i) When fossil fuel alone is combusted, the NO_x emission limit for fossil fuel in § 60.44b(a) applies.

(ii) When fossil fuel and chemical byproduct/waste are simultaneously combusted, the NO_x emission limit is 645 ng/J (1.5 lb/MMBtu).

(2) *Emission monitoring for NO_x*. (i) The NO_x emissions shall be determined by the compliance and performance test methods and procedures for NO_x in § 60.46b.

(ii) The monitoring of the NO_x emissions shall be performed in accordance with § 60.48b.

(3) *Reporting and recordkeeping requirements*. (i) The owner or operator of the AOGI shall submit a report on any excursions from the limits required by paragraph (y)(2) of this section to the Administrator with the quarterly report required by paragraph (i) of this section.

(ii) The owner or operator of the AOGI shall keep records of the monitoring required by paragraph (y)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner or operator of the AOGI shall perform all the applicable reporting and recordkeeping requirements of this section.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5089, Jan. 28, 2009; 77 FR 9461, Feb. 16, 2012]

Attachment B

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES (CONTINUED)

Subpart DDDDD—National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

SOURCE: 76 FR 15664, Mar. 21, 2011, unless otherwise noted.

What This Subpart Covers

§ 63.7480 What is the purpose of this subpart?

This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and work practice standards.

§ 63.7485 Am I subject to this subpart?

You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler or process heater as defined in § 63.7575 that is located at, or is part of, a major source of HAP, except as specified in § 63.7491. For purposes of this subpart, a major source of HAP is as defined in § 63.2, except that for oil and natural gas production facilities, a major source of HAP is as defined in § 63.7575.

[78 FR 7162, Jan. 31, 2013]

§ 63.7490 What is the affected source of this subpart?

(a) This subpart applies to new, reconstructed, and existing affected sources as described in paragraphs (a)(1) and (2) of this section.

(1) The affected source of this subpart is the collection at a major source of all existing industrial, commercial, and institutional boilers and process heaters within a subcategory as defined in § 63.7575.

(2) The affected source of this subpart is each new or reconstructed industrial, commercial, or institutional boiler or process heater, as defined in § 63.7575, located at a major source.

(b) A boiler or process heater is new if you commence construction of the boiler or process heater after June 4, 2010, and you meet the applicability criteria at the time you commence construction.

(c) A boiler or process heater is reconstructed if you meet the reconstruction criteria as defined in § 63.2, you commence reconstruction after June 4, 2010, and you meet the applicability criteria at the time you commence reconstruction.

(d) A boiler or process heater is existing if it is not new or reconstructed.

(e) An existing electric utility steam generating unit (EGU) that meets the applicability requirements of this subpart after the effective date of this final rule due to a change (e.g., fuel switch) is considered to be an existing source under this subpart.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7162, Jan. 31, 2013]

§ 63.7491 Are any boilers or process heaters not subject to this subpart?

The types of boilers and process heaters listed in paragraphs (a) through (n) of this section are not subject to this subpart.

(a) An electric utility steam generating unit (EGU) covered by subpart UUUUU of this part.

(b) A recovery boiler or furnace covered by subpart MM of this part.

(c) A boiler or process heater that is used specifically for research and development, including test steam boilers used to provide steam for testing the propulsion systems on military vessels. This does not include units that provide heat or steam to a process at a research and development facility.

(d) A hot water heater as defined in this subpart.

(e) A refining kettle covered by subpart X of this part.

(f) An ethylene cracking furnace covered by subpart YY of this part.

(g) Blast furnace stoves as described in EPA-453/R-01-005 (incorporated by reference, see § 63.14).

(h) Any boiler or process heater that is part of the affected source subject to another subpart of this part, such as boilers and process heaters used as control devices to comply with subparts JJJ, OOO, PPP, and U of this part.

(i) Any boiler or process heater that is used as a control device to comply with another subpart of this part, or part 60, part 61, or part 65 of this chapter provided that at least 50 percent of the average annual heat input during any 3 consecutive calendar years to the boiler or process heater is provided by regulated gas streams that are subject to another standard.

(j) Temporary boilers as defined in this subpart.

(k) Blast furnace gas fuel-fired boilers and process heaters as defined in this subpart.

(l) Any boiler specifically listed as an affected source in any standard(s) established under section 129 of the Clean Air Act.

(m) A unit that burns hazardous waste covered by Subpart EEE of this part. A unit that is exempt from Subpart EEE as specified in § 63.1200(b) is not covered by Subpart EEE.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7162, Jan. 31, 2013]

EDITORIAL NOTE: At 78 FR 7162, Jan. 31, 2013, § 63.7491 was amended by revising paragraph (n). However, there is no paragraph (n) to be revised.

§ 63.7495 When do I have to comply with this subpart?

(a) If you have a new or reconstructed boiler or process heater, you must comply with this subpart by January 31, 2013, or upon startup of your boiler or process heater, whichever is later.

(b) If you have an existing boiler or process heater, you must comply with this subpart no later than January 31, 2016, except as provided in § 63.6(i).

(c) If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, paragraphs (c)(1) and (2) of this section apply to you.

(1) Any new or reconstructed boiler or process heater at the existing source must be in compliance with this subpart upon startup.

(2) Any existing boiler or process heater at the existing source must be in compliance with this subpart within 3 years after the source becomes a major source.

(d) You must meet the notification requirements in § 63.7545 according to the schedule in § 63.7545 and in subpart A of this part. Some of the notifications must be submitted before you are required to comply with the emission limits and work practice standards in this subpart.

(e) If you own or operate an industrial, commercial, or institutional boiler or process heater and would be subject to this subpart except for the exemption in § 63.7491(l) for commercial and industrial solid waste incineration units covered by part 60, subpart CCCC or subpart DDDD, and you cease combusting solid waste, you must be in compliance with this subpart on the effective date of the switch from waste to fuel.

(f) If you own or operate an existing EGU that becomes subject to this subpart after January 31, 2013, you must be in compliance with the applicable existing source provisions of this subpart on the effective date such unit becomes subject to this subpart.

(g) If you own or operate an existing industrial, commercial, or institutional boiler or process heater and would be subject to this subpart except for a exemption in § 63.7491(i) that becomes subject to this subpart after January 31, 2013, you must be in compliance with the applicable existing source provisions of this subpart within 3 years after such unit becomes subject to this subpart.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7162, Jan. 31, 2013]

EDITORIAL NOTE: At 78 FR 7162, Jan. 31, 2013, § 63.7495 was amended by adding paragraph (e). However, there is already a paragraph (e).

Emission Limitations and Work Practice Standards

§ 63.7499 What are the subcategories of boilers and process heaters?

The subcategories of boilers and process heaters, as defined in § 63.7575 are:

(a) Pulverized coal/solid fossil fuel units.

(b) Stokers designed to burn coal/solid fossil fuel.

(c) Fluidized bed units designed to burn coal/solid fossil fuel.

(d) Stokers/sloped grate/other units designed to burn kiln dried biomass/bio-based solid.

(e) Fluidized bed units designed to burn biomass/bio-based solid.

(f) Suspension burners designed to burn biomass/bio-based solid.

(g) Fuel cells designed to burn biomass/bio-based solid.

(h) Hybrid suspension/grate burners designed to burn wet biomass/bio-based solid.

(i) Stokers/sloped grate/other units designed to burn wet biomass/bio-based solid.

(j) Dutch ovens/pile burners designed to burn biomass/bio-based solid.

(k) Units designed to burn liquid fuel that are non-continental units.

(l) Units designed to burn gas 1 fuels.

(m) Units designed to burn gas 2 (other) gases.

(n) Metal process furnaces.

(o) Limited-use boilers and process heaters.

(p) Units designed to burn solid fuel.

(q) Units designed to burn liquid fuel.

(r) Units designed to burn coal/solid fossil fuel.

(s) Fluidized bed units with an integrated fluidized bed heat exchanger designed to burn coal/solid fossil fuel.

(t) Units designed to burn heavy liquid fuel.

(u) Units designed to burn light liquid fuel.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7163, Jan. 31, 2013]

§ 63.7500 What emission limitations, work practice standards, and operating limits must I meet?

(a) You must meet the requirements in paragraphs (a)(1) through (3) of this section, except as provided in paragraphs (b), through (e) of this section. You must meet these requirements at all times the affected unit is operating, except as provided in paragraph (f) of this section.

(1) You must meet each emission limit and work practice standard in Tables 1 through 3, and 11 through 13 to this subpart that applies to your boiler or process heater, for each boiler or process heater at your source, except as provided under § 63.7522. The output-based emission limits, in units of pounds per million Btu of steam output, in Tables 1 or 2 to this subpart are an alternative applicable only to boilers and process heaters that generate steam. The output-based emission limits, in units of pounds per megawatt-hour, in Tables 1 or 2 to this subpart are an alternative applicable only to boilers that generate

electricity. If you operate a new boiler or process heater, you can choose to comply with alternative limits as discussed in paragraphs (a)(1)(i) through (a)(1)(iii) of this section, but on or after January 31, 2016, you must comply with the emission limits in Table 1 to this subpart.

(i) If your boiler or process heater commenced construction or reconstruction after June 4, 2010 and before May 20, 2011, you may comply with the emission limits in Table 1 or 11 to this subpart until January 31, 2016.

(ii) If your boiler or process heater commenced construction or reconstruction after May 20, 2011 and before December 23, 2011, you may comply with the emission limits in Table 1 or 12 to this subpart until January 31, 2016.

(iii) If your boiler or process heater commenced construction or reconstruction after December 23, 2011 and before January 31, 2013, you may comply with the emission limits in Table 1 or 13 to this subpart until January 31, 2016.

(2) You must meet each operating limit in Table 4 to this subpart that applies to your boiler or process heater. If you use a control device or combination of control devices not covered in Table 4 to this subpart, or you wish to establish and monitor an alternative operating limit or an alternative monitoring parameter, you must apply to the EPA Administrator for approval of alternative monitoring under § 63.8(f).

(3) At all times, you must operate and maintain any affected source (as defined in § 63.7490), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(b) As provided in § 63.6(g), EPA may approve use of an alternative to the work practice standards in this section.

(c) Limited-use boilers and process heaters must complete a tune-up every 5 years as specified in § 63.7540. They are not subject to the emission limits in Tables 1 and 2 or 11 through 13 to this subpart, the annual tune-up, or the energy assessment requirements in Table 3 to this subpart, or the operating limits in Table 4 to this subpart.

(d) Boilers and process heaters with a heat input capacity of less than or equal to 5 million Btu per hour in the units designed to burn gas 2 (other) fuels subcategory or units designed to burn light liquid fuels subcategory must complete a tune-up every 5 years as specified in § 63.7540.

(e) Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity of less than or equal to 5 million Btu per hour must complete a tune-up every 5 years as specified in § 63.7540. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity greater than 5 million Btu per hour and less than 10 million Btu per hour must complete a tune-up every 2 years as specified in § 63.7540. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or 11 through 13 to this subpart, or the operating limits in Table 4 to this subpart.

(f) These standards apply at all times the affected unit is operating, except during periods of startup and shutdown during which time you must comply only with Table 3 to this subpart.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7163, Jan. 31, 2013]

§ 63.7501 Affirmative Defense for Violation of Emission Standards During Malfunction.

In response to an action to enforce the standards set forth in § 63.7500 you may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at § 63.2. Appropriate penalties may be assessed if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) *Assertion of affirmative defense.* To establish the affirmative defense in any action to enforce such a standard, you must timely meet the reporting requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:

(1) The violation:

(i) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and

(ii) Could not have been prevented through careful planning, proper design, or better operation and maintenance practices; and

(iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(iv) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(2) Repairs were made as expeditiously as possible when a violation occurred; and

(3) The frequency, amount, and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and

(4) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(5) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment, and human health; and

(6) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(7) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and

(8) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.

(b) *Report.* The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, that it has met the requirements set forth in § 63.7500 of this section. This affirmative defense report shall be included in the first periodic compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.

[78 FR 7163, Jan. 31, 2013]

General Compliance Requirements

§ 63.7505 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limits, work practice standards, and operating limits in this subpart. These limits apply to you at all times the affected unit is operating except for the periods noted in § 63.7500(f).

(b) [Reserved]

(c) You must demonstrate compliance with all applicable emission limits using performance stack testing, fuel analysis, or continuous monitoring systems (CMS), including a continuous emission monitoring system (CEMS), continuous opacity monitoring system (COMS), continuous parameter monitoring system (CPMS), or particulate matter continuous parameter monitoring system (PM CPMS), where applicable. You may demonstrate compliance with the applicable emission limit for hydrogen chloride (HCl), mercury, or total selected metals (TSM) using fuel analysis if the emission rate calculated according to § 63.7530(c) is less than the applicable emission limit. (For gaseous fuels, you may not use fuel analyses to comply with the TSM alternative standard or the HCl standard.) Otherwise, you must demonstrate compliance for HCl, mercury, or TSM using performance testing, if subject to an applicable emission limit listed in Tables 1, 2, or 11 through 13 to this subpart.

(d) If you demonstrate compliance with any applicable emission limit through performance testing and subsequent compliance with operating limits (including the use of CPMS), or with a CEMS, or COMS, you must develop a site-specific monitoring plan according to the requirements in paragraphs (d)(1) through (4) of this section for the use of any CEMS, COMS, or CPMS. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under § 63.8(f).

(1) For each CMS required in this section (including CEMS, COMS, or CPMS), you must develop, and submit to the Administrator for approval upon request, a site-specific monitoring plan that addresses design, data collection, and the quality assurance and quality control elements outlined in § 63.8(d) and the elements described in paragraphs (d)(1)(i) through (iii) of this section. You must submit this site-specific monitoring plan, if requested, at least 60 days before your initial performance evaluation of your CMS. This requirement to develop and submit a site specific monitoring plan does not apply to affected sources with existing CEMS or COMS operated according to the performance specifications under appendix B to part 60 of this chapter and that meet the requirements of § 63.7525. Using the process described in § 63.8(f)(4), you may request approval of alternative monitoring system quality assurance and quality control procedures in place of those specified in this paragraph and, if approved, include the alternatives in your site-specific monitoring plan.

(i) Installation of the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device);

(ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems; and

(iii) Performance evaluation procedures and acceptance criteria (e.g., calibrations, accuracy audits, analytical drift).

(2) In your site-specific monitoring plan, you must also address paragraphs (d)(2)(i) through (iii) of this section.

(i) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1)(ii), (c)(3), and (c)(4)(ii);

(ii) Ongoing data quality assurance procedures in accordance with the general requirements of § 63.8(d); and

(iii) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 63.10(c) (as applicable in Table 10 to this subpart), (e)(1), and (e)(2)(i).

(3) You must conduct a performance evaluation of each CMS in accordance with your site-specific monitoring plan.

(4) You must operate and maintain the CMS in continuous operation according to the site-specific monitoring plan.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7164, Jan. 31, 2013]

Testing, Fuel Analyses, and Initial Compliance Requirements

§ 63.7510 What are my initial compliance requirements and by what date must I conduct them?

(a) For each boiler or process heater that is required or that you elect to demonstrate compliance with any of the applicable emission limits in Tables 1 or 2 or 11 through 13 of this subpart through performance testing, your initial compliance requirements include all the following:

(1) Conduct performance tests according to § 63.7520 and Table 5 to this subpart.

(2) Conduct a fuel analysis for each type of fuel burned in your boiler or process heater according to § 63.7521 and Table 6 to this subpart, except as specified in paragraphs (a)(2)(i) through (iii) of this section.

(i) For each boiler or process heater that burns a single type of fuel, you are not required to conduct a fuel analysis for each type of fuel burned in your boiler or process heater according to § 63.7521 and Table 6 to this subpart. For purposes of this subpart, units that use a supplemental fuel only for startup, unit shutdown, and transient flame stability purposes still qualify as units that burn a single type of fuel, and the supplemental fuel is not subject to the fuel analysis requirements under § 63.7521 and Table 6 to this subpart.

(ii) When natural gas, refinery gas, or other gas 1 fuels are co-fired with other fuels, you are not required to conduct a fuel analysis of those fuels according to § 63.7521 and Table 6 to this subpart. If gaseous fuels other than natural gas, refinery gas, or other gas 1 fuels are co-fired with other fuels and those gaseous fuels are subject to another subpart of this part, part 60, part 61, or part 65, you are not required to conduct a fuel analysis of those fuels according to § 63.7521 and Table 6 to this subpart.

(iii) You are not required to conduct a chlorine fuel analysis for any gaseous fuels. You must conduct a fuel analysis for mercury on gaseous fuels unless the fuel is exempted in paragraphs (a)(2)(i) and (ii) of this section.

(3) Establish operating limits according to § 63.7530 and Table 7 to this subpart.

(4) Conduct CMS performance evaluations according to § 63.7525.

(b) For each boiler or process heater that you elect to demonstrate compliance with the applicable emission limits in Tables 1 or 2 or 11 through 13 to this subpart for HCl, mercury, or TSM through fuel analysis, your initial compliance requirement is to conduct a fuel analysis for each type of fuel burned in your boiler or process heater according to § 63.7521 and Table 6 to this subpart and establish operating limits according to § 63.7530 and Table 8 to this subpart. The fuels described in paragraph (a)(2)(i) and (ii) of this section are exempt from these fuel analysis and operating limit requirements. The fuels described in paragraph (a)(2)(ii) of this section are exempt from the chloride fuel analysis and operating limit requirements. Boilers and process heaters that use a CEMS for mercury or HCl are exempt from the performance testing and operating limit requirements specified in paragraph (a) of this section for the HAP for which CEMS are used.

(c) If your boiler or process heater is subject to a carbon monoxide (CO) limit, your initial compliance demonstration for CO is to conduct a performance test for CO according to Table 5 to this subpart or conduct a performance evaluation of your continuous CO monitor, if applicable, according to § 63.7525(a). Boilers and process heaters that use a CO CEMS to comply with the applicable alternative CO CEMS emission standard listed in Tables 12, or 11 through 13 to this subpart, as specified in § 63.7525(a), are exempt from the initial CO performance testing and oxygen concentration operating limit requirements specified in paragraph (a) of this section.

(d) If your boiler or process heater is subject to a PM limit, your initial compliance demonstration for PM is to conduct a performance test in accordance with § 63.7520 and Table 5 to this subpart.

(e) For existing affected sources (as defined in § 63.7490), you must complete the initial compliance demonstration, as specified in paragraphs (a) through (d) of this section, no later than 180 days after the compliance date that is specified for your source in § 63.7495 and according to the applicable provisions in § 63.7(a)(2) as cited in Table 10 to this subpart, except as specified in paragraph (j) of this section. You must complete an initial tune-up by following the procedures described in § 63.7540(a)(10)(i) through (vi) no later than the compliance date specified in § 63.7495, except as specified in paragraph (j) of this section. You must complete the one-time energy assessment specified in Table 3 to this subpart no later than the compliance date specified in § 63.7495, except as specified in paragraph (j) of this section.

(f) For new or reconstructed affected sources (as defined in § 63.7490), you must complete the initial compliance demonstration with the emission limits no later than July 30, 2013 or within 180 days after startup of the source, whichever is later. If you are demonstrating compliance with an emission limit in Tables 11 through 13 to this subpart that is less stringent (that is, higher) than the applicable emission limit in Table 1 to this subpart, you must demonstrate compliance with the applicable emission limit in Table 1 no later than July 29, 2016.

(g) For new or reconstructed affected sources (as defined in § 63.7490), you must demonstrate initial compliance with the applicable work practice standards in Table 3 to this subpart within the applicable annual, biennial, or 5-year schedule as specified in § 63.7540(a) following the initial compliance date specified in § 63.7495(a). Thereafter, you are required to complete the applicable annual, biennial, or 5-year tune-up as specified in § 63.7540(a).

(h) For affected sources (as defined in § 63.7490) that ceased burning solid waste consistent with § 63.7495(e) and for which the initial compliance date has passed, you must demonstrate compliance within 60 days of the effective date of the waste-to-fuel switch. If you have not conducted your compliance demonstration for this subpart within the previous 12 months, you must complete all compliance demonstrations for this subpart before you commence or recommence combustion of solid waste.

(i) For an existing EGU that becomes subject after January 31, 2013, you must demonstrate compliance within 180 days after becoming an affected source.

(j) For existing affected sources (as defined in § 63.7490) that have not operated between the effective date of the rule and the compliance date that is specified for your source in § 63.7495, you must complete the initial compliance demonstration, if subject to the emission limits in Table 2 to this subpart, as specified in paragraphs (a) through (d) of this section, no later than 180 days after the re-start of the affected source and according to the applicable provisions in § 63.7(a)(2) as cited in Table 10 to this subpart. You must complete an initial tune-up by following the procedures described in § 63.7540(a)(10)(i) through (vi) no later than 30 days after the re-start of the affected source and, if applicable, complete the one-time energy assessment specified in Table 3 to this subpart, no later than the compliance date specified in § 63.7495.

[78 FR 7164, Jan. 31, 2013]

§ 63.7515 When must I conduct subsequent performance tests, fuel analyses, or tune-ups?

(a) You must conduct all applicable performance tests according to § 63.7520 on an annual basis, except as specified in paragraphs (b) through (e), (g), and (h) of this section. Annual performance tests must be completed no more than 13 months after the previous performance test, except as specified in paragraphs (b) through (e), (g), and (h) of this section.

(b) If your performance tests for a given pollutant for at least 2 consecutive years show that your emissions are at or below 75 percent of the emission limit (or, in limited instances as specified in Tables 1 and 2 or 11 through 13 to this subpart, at or below the emission limit) for the pollutant, and if there are no changes in the operation of the individual boiler or process heater or air pollution control equipment that could increase emissions, you may choose to conduct performance tests for the pollutant every third year. Each such performance test must be conducted no more than 37 months after the previous performance test. If you elect to demonstrate compliance using emission averaging under § 63.7522, you must continue to conduct performance tests annually. The requirement to test at maximum chloride input level is waived unless the stack test is conducted for HCl. The requirement to test at maximum mercury input level is waived unless the stack test is conducted for mercury. The requirement to test at maximum TSM input level is waived unless the stack test is conducted for TSM.

(c) If a performance test shows emissions exceeded the emission limit or 75 percent of the emission limit (as specified in Tables 1 and 2 or 11 through 13 to this subpart) for a pollutant, you must conduct annual performance tests for that pollutant until all performance tests over a consecutive 2-year period meet the required level (at or below 75 percent of the emission limit, as specified in Tables 1 and 2 or 11 through 13 to this subpart).

(d) If you are required to meet an applicable tune-up work practice standard, you must conduct an annual, biennial, or 5-year performance tune-up according to § 63.7540(a)(10), (11), or (12), respectively. Each annual tune-up specified in § 63.7540(a)(10) must be no more than 13 months after the previous tune-up. Each biennial tune-up specified in § 63.7540(a)(11) must be conducted no more than 25 months after the previous tune-up. Each 5-year tune-up specified in § 63.7540(a)(12) must be conducted no more than 61 months after the previous tune-up. For a new or reconstructed affected source (as defined in § 63.7490), the first annual, biennial, or 5-year tune-up must be no later than 13 months, 25 months, or 61 months, respectively, after the initial startup of the new or reconstructed affected source.

(e) If you demonstrate compliance with the mercury, HCl, or TSM based on fuel analysis, you must conduct a monthly fuel analysis according to § 63.7521 for each type of fuel burned that is subject to an emission limit in Tables 1, 2, or 11 through 13 to this subpart. You may comply with this monthly requirement by completing the fuel analysis any time within the calendar month as long as the analysis is separated from the previous analysis by at least 14 calendar days. If you burn a new type of fuel, you must conduct a fuel analysis before burning the new type of fuel in your boiler or process heater. You must still meet all applicable continuous compliance requirements in § 63.7540. If each of 12 consecutive monthly fuel analyses demonstrates 75 percent or less of the compliance level, you may decrease the fuel analysis frequency to quarterly for that fuel. If any quarterly sample exceeds 75 percent of the compliance level or you begin burning a new type of fuel, you must return to monthly monitoring for that fuel, until 12 months of fuel analyses are again less than 75 percent of the compliance level.

(f) You must report the results of performance tests and the associated fuel analyses within 60 days after the completion of the performance tests. This report must also verify that the operating limits for each boiler or process heater have not changed or provide documentation of revised operating limits established according to § 63.7530 and Table 7 to this subpart, as applicable. The reports for all subsequent performance tests must include all applicable information required in § 63.7550.

(g) For affected sources (as defined in § 63.7490) that have not operated since the previous compliance demonstration and more than one year has passed since the previous compliance demonstration, you must complete the subsequent compliance demonstration, if subject to the emission limits in Tables 1, 2, or 11 through 13 to this subpart, no later than 180 days after the re-start of the affected source and according to the applicable provisions in § 63.7(a)(2) as cited in Table 10 to this subpart. You must complete a subsequent tune-up by following the procedures described in § 63.7540(a)(10)(i) through (vi) and the schedule described in § 63.7540(a)(13) for units that are not operating at the time of their scheduled tune-up.

(h) If your affected boiler or process heater is in the unit designed to burn light liquid subcategory and you combust ultra low sulfur liquid fuel, you do not need to conduct further performance tests if the pollutants measured during the initial compliance performance tests meet the emission limits in Tables 1 or 2 of this subpart providing you demonstrate ongoing compliance with the emissions limits by monitoring and recording the type of fuel combusted on a monthly basis. If you intend to use a fuel other than ultra low sulfur liquid fuel, natural gas, refinery gas, or other gas 1 fuel, you must conduct new performance tests within 60 days of burning the new fuel type.

(i) If you operate a CO CEMS that meets the Performance Specifications outlined in § 63.7525(a)(3) of this subpart to demonstrate compliance with the applicable alternative CO CEMS emission standard listed in Tables 1, 2, or 11 through 13 to this subpart, you are not required to conduct CO performance tests and are not subject to the oxygen concentration operating limit requirement specified in § 63.7510(a).

[78 FR 7165, Jan. 31, 2013]

§ 63.7520 What stack tests and procedures must I use?

(a) You must conduct all performance tests according to § 63.7(c), (d), (f), and (h). You must also develop a site-specific stack test plan according to the requirements in § 63.7(c). You shall conduct all performance tests under such conditions as the Administrator specifies to you based on the representative performance of each boiler or process heater for the period being tested. Upon request, you shall make available to the Administrator such records as may be necessary to determine the conditions of the performance tests.

(b) You must conduct each performance test according to the requirements in Table 5 to this subpart.

(c) You must conduct each performance test under the specific conditions listed in Tables 5 and 7 to this subpart. You must conduct performance tests at representative operating load conditions while burning the type of fuel or mixture of fuels that has the highest content of chlorine and mercury, and TSM if you are opting to comply with the TSM alternative standard and you must demonstrate initial compliance and establish your operating limits based on these performance tests. These requirements could result in the need to conduct more than one performance test. Following each performance test and until the next performance test, you must comply with the operating limit for operating load conditions specified in Table 4 to this subpart.

(d) You must conduct a minimum of three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must comply with the minimum applicable sampling times or volumes specified in Tables 1 and 2 or 11 through 13 to this subpart.

(e) To determine compliance with the emission limits, you must use the F-Factor methodology and equations in sections 12.2 and 12.3 of EPA Method 19 at 40 CFR part 60, appendix A-7 of this chapter to convert the measured particulate matter (PM) concentrations, the measured HCl concentrations, the measured mercury concentrations, and the measured TSM concentrations that result from the performance test to pounds per million Btu heat input emission rates.

(f) Except for a 30-day rolling average based on CEMS (or sorbent trap monitoring system) data, if measurement results for any pollutant are reported as below the method detection level (e.g., laboratory analytical results for one or more sample components are below the method defined analytical detection level), you must use the method detection level as the measured emissions level for that pollutant in calculating compliance. The measured result for a multiple component analysis (e.g., analytical values for multiple Method 29 fractions both for individual HAP metals and for total HAP metals) may include a combination of method detection level data and analytical data reported above the method detection level.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7166, Jan. 31, 2013]

§ 63.7521 What fuel analyses, fuel specification, and procedures must I use?

(a) For solid and liquid fuels, you must conduct fuel analyses for chloride and mercury according to the procedures in paragraphs (b) through (e) of this section and Table 6 to this subpart, as applicable. For solid fuels and liquid fuels, you must also conduct fuel analyses for TSM if you are opting to comply with the TSM alternative standard. For gas 2 (other) fuels, you must conduct fuel analyses for mercury according to the procedures in paragraphs (b) through (e) of this section and Table 6 to this subpart, as applicable. (For gaseous fuels, you may not use fuel analyses to comply with the TSM alternative standard or the HCl standard.) For purposes of complying with this section, a fuel gas system that consists of multiple gaseous fuels collected and mixed with each other is considered a single fuel type and sampling and analysis is only required on the combined fuel gas system that will feed the boiler or process heater. Sampling and analysis of the individual gaseous streams prior to combining is not required. You are not required to conduct fuel analyses for fuels used for only startup, unit shutdown, and transient flame stability purposes. You are required to conduct fuel analyses only for fuels and units that are subject to emission limits for mercury, HCl, or TSM in Tables 1 and 2 or 11 through 13 to this subpart. Gaseous and liquid fuels are exempt from the sampling requirements in paragraphs (c) and (d) of this section and Table 6 to this subpart.

(b) You must develop a site-specific fuel monitoring plan according to the following procedures and requirements in paragraphs (b)(1) and (2) of this section, if you are required to conduct fuel analyses as specified in § 63.7510.

(1) If you intend to use an alternative analytical method other than those required by Table 6 to this subpart, you must submit the fuel analysis plan to the Administrator for review and approval no later than

60 days before the date that you intend to conduct the initial compliance demonstration described in § 63.7510.

(2) You must include the information contained in paragraphs (b)(2)(i) through (vi) of this section in your fuel analysis plan.

(i) The identification of all fuel types anticipated to be burned in each boiler or process heater.

(ii) For each anticipated fuel type, the notification of whether you or a fuel supplier will be conducting the fuel analysis.

(iii) For each anticipated fuel type, a detailed description of the sample location and specific procedures to be used for collecting and preparing the composite samples if your procedures are different from paragraph (c) or (d) of this section. Samples should be collected at a location that most accurately represents the fuel type, where possible, at a point prior to mixing with other dissimilar fuel types.

(iv) For each anticipated fuel type, the analytical methods from Table 6, with the expected minimum detection levels, to be used for the measurement of chlorine or mercury.

(v) If you request to use an alternative analytical method other than those required by Table 6 to this subpart, you must also include a detailed description of the methods and procedures that you are proposing to use. Methods in Table 6 shall be used until the requested alternative is approved.

(vi) If you will be using fuel analysis from a fuel supplier in lieu of site-specific sampling and analysis, the fuel supplier must use the analytical methods required by Table 6 to this subpart.

(c) At a minimum, you must obtain three composite fuel samples for each fuel type according to the procedures in paragraph (c)(1) or (2) of this section, or the methods listed in Table 6 to this subpart, or use an automated sampling mechanism that provides representative composite fuel samples for each fuel type that includes both coarse and fine material.

(1) If sampling from a belt (or screw) feeder, collect fuel samples according to paragraphs (c)(1)(i) and (ii) of this section.

(i) Stop the belt and withdraw a 6-inch wide sample from the full cross-section of the stopped belt to obtain a minimum two pounds of sample. You must collect all the material (fines and coarse) in the full cross-section. You must transfer the sample to a clean plastic bag.

(ii) Each composite sample will consist of a minimum of three samples collected at approximately equal one-hour intervals during the testing period for sampling during performance stack testing. For monthly sampling, each composite sample shall be collected at approximately equal 10-day intervals during the month.

(2) If sampling from a fuel pile or truck, you must collect fuel samples according to paragraphs (c)(2)(i) through (iii) of this section.

(i) For each composite sample, you must select a minimum of five sampling locations uniformly spaced over the surface of the pile.

(ii) At each sampling site, you must dig into the pile to a uniform depth of approximately 18 inches. You must insert a clean shovel into the hole and withdraw a sample, making sure that large pieces do not fall off during sampling; use the same shovel to collect all samples.

(iii) You must transfer all samples to a clean plastic bag for further processing.

(d) You must prepare each composite sample according to the procedures in paragraphs (d)(1) through (7) of this section.

(1) You must thoroughly mix and pour the entire composite sample over a clean plastic sheet.

(2) You must break large sample pieces (e.g., larger than 3 inches) into smaller sizes.

(3) You must make a pie shape with the entire composite sample and subdivide it into four equal parts.

(4) You must separate one of the quarter samples as the first subset.

(5) If this subset is too large for grinding, you must repeat the procedure in paragraph (d)(3) of this section with the quarter sample and obtain a one-quarter subset from this sample.

(6) You must grind the sample in a mill.

(7) You must use the procedure in paragraph (d)(3) of this section to obtain a one-quarter subsample for analysis. If the quarter sample is too large, subdivide it further using the same procedure.

(e) You must determine the concentration of pollutants in the fuel (mercury and/or chlorine and/or TSM) in units of pounds per million Btu of each composite sample for each fuel type according to the procedures in Table 6 to this subpart, for use in Equations 7, 8, and 9 of this subpart.

(f) To demonstrate that a gaseous fuel other than natural gas or refinery gas qualifies as an other gas 1 fuel, as defined in § 63.7575, you must conduct a fuel specification analyses for mercury according to the procedures in paragraphs (g) through (i) of this section and Table 6 to this subpart, as applicable, except as specified in paragraph (f)(1) through (4) of this section.

(1) You are not required to conduct the fuel specification analyses in paragraphs (g) through (i) of this section for natural gas or refinery gas.

(2) You are not required to conduct the fuel specification analyses in paragraphs (g) through (i) of this section for gaseous fuels that are subject to another subpart of this part, part 60, part 61, or part 65.

(3) You are not required to conduct the fuel specification analyses in paragraphs (g) through (i) of this section on gaseous fuels for units that are complying with the limits for units designed to burn gas 2 (other) fuels.

(4) You are not required to conduct the fuel specification analyses in paragraphs (g) through (i) of this section for gas streams directly derived from natural gas at natural gas production sites or natural gas plants.

(g) You must develop and submit a site-specific fuel analysis plan for other gas 1 fuels to the EPA Administrator for review and approval according to the following procedures and requirements in paragraphs (g)(1) and (2) of this section.

(1) If you intend to use an alternative analytical method other than those required by Table 6 to this subpart, you must submit the fuel analysis plan to the Administrator for review and approval no later than

60 days before the date that you intend to conduct the initial compliance demonstration described in § 63.7510.

(2) You must include the information contained in paragraphs (g)(2)(i) through (vi) of this section in your fuel analysis plan.

(i) The identification of all gaseous fuel types other than those exempted from fuel specification analysis under (f)(1) through (3) of this section anticipated to be burned in each boiler or process heater.

(ii) For each anticipated fuel type, the notification of whether you or a fuel supplier will be conducting the fuel specification analysis.

(iii) For each anticipated fuel type, a detailed description of the sample location and specific procedures to be used for collecting and preparing the samples if your procedures are different from the sampling methods contained in Table 6 to this subpart. Samples should be collected at a location that most accurately represents the fuel type, where possible, at a point prior to mixing with other dissimilar fuel types. If multiple boilers or process heaters are fueled by a common fuel stream it is permissible to conduct a single gas specification at the common point of gas distribution.

(iv) For each anticipated fuel type, the analytical methods from Table 6 to this subpart, with the expected minimum detection levels, to be used for the measurement of mercury.

(v) If you request to use an alternative analytical method other than those required by Table 6 to this subpart, you must also include a detailed description of the methods and procedures that you are proposing to use. Methods in Table 6 to this subpart shall be used until the requested alternative is approved.

(vi) If you will be using fuel analysis from a fuel supplier in lieu of site-specific sampling and analysis, the fuel supplier must use the analytical methods required by Table 6 to this subpart.

(h) You must obtain a single fuel sample for each fuel type according to the sampling procedures listed in Table 6 for fuel specification of gaseous fuels.

(i) You must determine the concentration in the fuel of mercury, in units of microgram per cubic meter, dry basis, of each sample for each other gas 1 fuel type according to the procedures in Table 6 to this subpart.

[78 FR 7167, Jan. 31, 2013]

§ 63.7522 Can I use emissions averaging to comply with this subpart?

(a) As an alternative to meeting the requirements of § 63.7500 for PM (or TSM), HCl, or mercury on a boiler or process heater-specific basis, if you have more than one existing boiler or process heater in any subcategories located at your facility, you may demonstrate compliance by emissions averaging, if your averaged emissions are not more than 90 percent of the applicable emission limit, according to the procedures in this section. You may not include new boilers or process heaters in an emissions average.

(b) For a group of two or more existing boilers or process heaters in the same subcategory that each vent to a separate stack, you may average PM (or TSM), HCl, or mercury emissions among existing units to demonstrate compliance with the limits in Table 2 to this subpart as specified in paragraph (b)(1) through (3) of this section, if you satisfy the requirements in paragraphs (c) through (g) of this section.

(1) You may average units using a CEMS or PM CPMS for demonstrating compliance.

(2) For mercury and HCl, averaging is allowed as follows:

(i) You may average among units in any of the solid fuel subcategories.

(ii) You may average among units in any of the liquid fuel subcategories.

(iii) You may average among units in a subcategory of units designed to burn gas 2 (other) fuels.

(iv) You may not average across the units designed to burn liquid, units designed to burn solid fuel, and units designed to burn gas 2 (other) subcategories.

(3) For PM (or TSM), averaging is only allowed between units within each of the following subcategories and you may not average across subcategories:

(i) Units designed to burn coal/solid fossil fuel.

(ii) Stokers/sloped grate/other units designed to burn kiln dried biomass/bio-based solids.

(iii) Stokers/sloped grate/other units designed to burn wet biomass/bio-based solids.

(iv) Fluidized bed units designed to burn biomass/bio-based solid.

(v) Suspension burners designed to burn biomass/bio-based solid.

(vi) Dutch ovens/pile burners designed to burn biomass/bio-based solid.

(vii) Fuel Cells designed to burn biomass/bio-based solid.

(viii) Hybrid suspension/grate burners designed to burn wet biomass/bio-based solid.

(ix) Units designed to burn heavy liquid fuel.

(x) Units designed to burn light liquid fuel.

(xi) Units designed to burn liquid fuel that are non-continental units.

(xii) Units designed to burn gas 2 (other) gases.

(c) For each existing boiler or process heater in the averaging group, the emission rate achieved during the initial compliance test for the HAP being averaged must not exceed the emission level that was being achieved on January 31, 2013 or the control technology employed during the initial compliance test must not be less effective for the HAP being averaged than the control technology employed on January 31, 2013.

(d) The averaged emissions rate from the existing boilers and process heaters participating in the emissions averaging option must not exceed 90 percent of the limits in Table 2 to this subpart at all times the affected units are operating following the compliance date specified in § 63.7495.

(e) You must demonstrate initial compliance according to paragraph (e)(1) or (2) of this section using the maximum rated heat input capacity or maximum steam generation capacity of each unit and the results of the initial performance tests or fuel analysis.

(1) You must use Equation 1a or 1b or 1c of this section to demonstrate that the PM (or TSM), HCl, or mercury emissions from all existing units participating in the emissions averaging option for that pollutant do not exceed the emission limits in Table 2 to this subpart. Use Equation 1a if you are complying with the emission limits on a heat input basis, use Equation 1b if you are complying with the emission limits on a steam generation (output) basis, and use Equation 1c if you are complying with the emission limits on a electric generation (output) basis.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times Hm) \div \sum_{i=1}^{n} Hm \qquad \text{(Eq.1a)}$$

Where:

AveWeightedEmissions = Average weighted emissions for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input.

Er = Emission rate (as determined during the initial compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c).

Hm = Maximum rated heat input capacity of unit, i, in units of million Btu per hour.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times So) \div \sum_{i=1}^{n} So \qquad \text{(Eq.1b)}$$

Where:

AveWeightedEmissions = Average weighted emissions for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of steam output.

Er = Emission rate (as determined during the initial compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of steam output. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c). If you are taking credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, Eadj, determined according to § 63.7533 for that unit.

So = Maximum steam output capacity of unit, i, in units of million Btu per hour, as defined in § 63.7575.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times Eo) \div \sum_{i=1}^{n} Eo \qquad \text{(Eq.1c)}$$

Where:

AveWeightedEmissions = Average weighted emissions for PM (or TSM), HCl, or mercury, in units of pounds per megawatt hour.

Er = Emission rate (as determined during the initial compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per megawatt hour. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c). If you are taking credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, Eadj, determined according to § 63.7533 for that unit.

Eo = Maximum electric generating output capacity of unit, i, in units of megawatt hour, as defined in § 63.7575.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

(2) If you are not capable of determining the maximum rated heat input capacity of one or more boilers that generate steam, you may use Equation 2 of this section as an alternative to using Equation 1a of this section to demonstrate that the PM (or TSM), HCl, or mercury emissions from all existing units participating in the emissions averaging option do not exceed the emission limits for that pollutant in Table 2 to this subpart that are in pounds per million Btu of heat input.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times Sm \times Cfi) \div \sum_{i=1}^{n} (Sm \times Cfi) \qquad \text{(Eq. 2)}$$

Where:

AveWeightedEmissions = Average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input.

Er = Emission rate (as determined during the most recent compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c).

Sm = Maximum steam generation capacity by unit, i, in units of pounds per hour.

Cfi = Conversion factor, calculated from the most recent compliance test, in units of million Btu of heat input per pounds of steam generated for unit, i.

1.1 = Required discount factor.

(f) After the initial compliance demonstration described in paragraph (e) of this section, you must demonstrate compliance on a monthly basis determined at the end of every month (12 times per year) according to paragraphs (f)(1) through (3) of this section. The first monthly period begins on the compliance date specified in § 63.7495. If the affected source elects to collect monthly data for up the 11 months preceding the first monthly period, these additional data points can be used to compute the 12-month rolling average in paragraph (f)(3) of this section.

(1) For each calendar month, you must use Equation 3a or 3b or 3c of this section to calculate the average weighted emission rate for that month. Use Equation 3a and the actual heat input for the month for each existing unit participating in the emissions averaging option if you are complying with emission limits on a heat input basis. Use Equation 3b and the actual steam generation for the month if you are complying with the emission limits on a steam generation (output) basis. Use Equation 3c and the actual steam generation for the month if you are complying with the emission limits on a electrical generation (output) basis.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times Hb) \div \sum_{i=1}^{n} Hb \qquad \text{(Eq. 3a)}$$

Where:

AveWeightedEmissions = Average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input, for that calendar month.

Er = Emission rate (as determined during the most recent compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart.

Hb = The heat input for that calendar month to unit, i, in units of million Btu.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times So) \div \sum_{i=1}^{n} So \qquad \text{(Eq. 3b)}$$

Where:

AveWeightedEmissions = Average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of steam output, for that calendar month.

Er = Emission rate (as determined during the most recent compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of steam output. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart. If you are taking credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, E_{adj} , determined according to § 63.7533 for that unit.

So = The steam output for that calendar month from unit, i, in units of million Btu, as defined in § 63.7575.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times Eo) \div \sum_{i=1}^{n} Eo \qquad \text{(Eq. 3c)}$$

Where:

AveWeightedEmissions = Average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per megawatt hour, for that calendar month.

Er = Emission rate (as determined during the most recent compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per megawatt hour. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart. If you are taking credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, E_{adj} , determined according to § 63.7533 for that unit.

Eo = The electric generating output for that calendar month from unit, i, in units of megawatt hour, as defined in § 63.7575.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

(2) If you are not capable of monitoring heat input, you may use Equation 4 of this section as an alternative to using Equation 3a of this section to calculate the average weighted emission rate using the actual steam generation from the boilers participating in the emissions averaging option.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n}(Er \times Sa \times Cfi) \div \sum_{i=1}^{n}(Sa \times Cfi) \quad \text{(Eq. 4)}$$

Where:

AveWeightedEmissions = average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input for that calendar month.

Er = Emission rate (as determined during the most recent compliance demonstration of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart.

Sa = Actual steam generation for that calendar month by boiler, i, in units of pounds.

Cfi = Conversion factor, as calculated during the most recent compliance test, in units of million Btu of heat input per pounds of steam generated for boiler, i.

1.1 = Required discount factor.

(3) Until 12 monthly weighted average emission rates have been accumulated, calculate and report only the average weighted emission rate determined under paragraph (f)(1) or (2) of this section for each calendar month. After 12 monthly weighted average emission rates have been accumulated, for each subsequent calendar month, use Equation 5 of this section to calculate the 12-month rolling average of the monthly weighted average emission rates for the current calendar month and the previous 11 calendar months.

$$Eavg = \sum_{i=1}^{n} ERi \div 12 \quad \text{(Eq. 5)}$$

Where:

Eavg = 12-month rolling average emission rate, (pounds per million Btu heat input)

ERi = Monthly weighted average, for calendar month “i” (pounds per million Btu heat input), as calculated by paragraph (f)(1) or (2) of this section.

(g) You must develop, and submit upon request to the applicable Administrator for review and approval, an implementation plan for emission averaging according to the following procedures and requirements in paragraphs (g)(1) through (4) of this section.

(1) You must submit the implementation plan no later than 180 days before the date that the facility intends to demonstrate compliance using the emission averaging option.

(2) You must include the information contained in paragraphs (g)(2)(i) through (vii) of this section in your implementation plan for all emission sources included in an emissions average:

(i) The identification of all existing boilers and process heaters in the averaging group, including for each either the applicable HAP emission level or the control technology installed as of January 31, 2013 and the date on which you are requesting emission averaging to commence;

(ii) The process parameter (heat input or steam generated) that will be monitored for each averaging group;

(iii) The specific control technology or pollution prevention measure to be used for each emission boiler or process heater in the averaging group and the date of its installation or application. If the pollution prevention measure reduces or eliminates emissions from multiple boilers or process heaters, the owner or operator must identify each boiler or process heater;

(iv) The test plan for the measurement of PM (or TSM), HCl, or mercury emissions in accordance with the requirements in § 63.7520;

(v) The operating parameters to be monitored for each control system or device consistent with § 63.7500 and Table 4, and a description of how the operating limits will be determined;

(vi) If you request to monitor an alternative operating parameter pursuant to § 63.7525, you must also include:

(A) A description of the parameter(s) to be monitored and an explanation of the criteria used to select the parameter(s); and

(B) A description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device; the frequency and content of monitoring, reporting, and recordkeeping requirements; and a demonstration, to the satisfaction of the Administrator, that the proposed monitoring frequency is sufficient to represent control device operating conditions; and

(vii) A demonstration that compliance with each of the applicable emission limit(s) will be achieved under representative operating load conditions. Following each compliance demonstration and until the next compliance demonstration, you must comply with the operating limit for operating load conditions specified in Table 4 to this subpart.

(3) The Administrator shall review and approve or disapprove the plan according to the following criteria:

(i) Whether the content of the plan includes all of the information specified in paragraph (g)(2) of this section; and

(ii) Whether the plan presents sufficient information to determine that compliance will be achieved and maintained.

(4) The applicable Administrator shall not approve an emission averaging implementation plan containing any of the following provisions:

(i) Any averaging between emissions of differing pollutants or between differing sources; or

(ii) The inclusion of any emission source other than an existing unit in the same subcategories.

(h) For a group of two or more existing affected units, each of which vents through a single common stack, you may average PM (or TSM), HCl, or mercury emissions to demonstrate compliance with the limits for that pollutant in Table 2 to this subpart if you satisfy the requirements in paragraph (i) or (j) of this section.

(i) For a group of two or more existing units in the same subcategories, each of which vents through a common emissions control system to a common stack, that does not receive emissions from units in other subcategories or categories, you may treat such averaging group as a single existing unit for purposes of this subpart and comply with the requirements of this subpart as if the group were a single unit.

(j) For all other groups of units subject to the common stack requirements of paragraph (h) of this section, including situations where the exhaust of affected units are each individually controlled and then sent to a common stack, the owner or operator may elect to:

(1) Conduct performance tests according to procedures specified in § 63.7520 in the common stack if affected units from other subcategories vent to the common stack. The emission limits that the group must comply with are determined by the use of Equation 6 of this section.

$$En = \sum_{i=1}^{n}(ELi \times Hi) \div \sum_{i=1}^{n} Hi \qquad \text{(Eq. 6)}$$

Where:

En = HAP emission limit, pounds per million British thermal units (lb/MMBtu), parts per million (ppm), or nanograms per dry standard cubic meter (ng/dscm).

ELi = Appropriate emission limit from Table 2 to this subpart for unit i, in units of lb/MMBtu, ppm or ng/dscm.

Hi = Heat input from unit i, MMBtu.

(2) Conduct performance tests according to procedures specified in § 63.7520 in the common stack. If affected units and non-affected units vent to the common stack, the non-affected units must be shut down or vented to a different stack during the performance test unless the facility determines to demonstrate compliance with the non-affected units venting to the stack; and

(3) Meet the applicable operating limit specified in § 63.7540 and Table 8 to this subpart for each emissions control system (except that, if each unit venting to the common stack has an applicable opacity operating limit, then a single continuous opacity monitoring system may be located in the common stack instead of in each duct to the common stack).

(k) The common stack of a group of two or more existing boilers or process heaters in the same subcategories subject to paragraph (h) of this section may be treated as a separate stack for purposes of paragraph (b) of this section and included in an emissions averaging group subject to paragraph (b) of this section.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7168, Jan. 31, 2013]

§ 63.7525 What are my monitoring, installation, operation, and maintenance requirements?

(a) If your boiler or process heater is subject to a CO emission limit in Tables 1, 2, or 11 through 13 to this subpart, you must install, operate, and maintain an oxygen analyzer system, as defined in § 63.7575, or install, certify, operate and maintain continuous emission monitoring systems for CO and oxygen according to the procedures in paragraphs (a)(1) through (7) of this section.

(1) Install the CO CEMS and oxygen analyzer by the compliance date specified in § 63.7495. The CO and oxygen levels shall be monitored at the same location at the outlet of the boiler or process heater.

(2) To demonstrate compliance with the applicable alternative CO CEMS emission standard listed in Tables 1, 2, or 11 through 13 to this subpart, you must install, certify, operate, and maintain a CO CEMS and an oxygen analyzer according to the applicable procedures under Performance Specification 4, 4A, or 4B at 40 CFR part 60, appendix B, the site-specific monitoring plan developed according to § 63.7505(d), and the requirements in § 63.7540(a)(8) and paragraph (a) of this section. Any boiler or process heater that has a CO CEMS that is compliant with Performance Specification 4, 4A, or 4B at 40 CFR part 60, appendix B, a site-specific monitoring plan developed according to § 63.7505(d), and the

requirements in § 63.7540(a)(8) and paragraph (a) of this section must use the CO CEMS to comply with the applicable alternative CO CEMS emission standard listed in Tables 1, 2, or 11 through 13 to this subpart.

(i) You must conduct a performance evaluation of each CO CEMS according to the requirements in § 63.8(e) and according to Performance Specification 4, 4A, or 4B at 40 CFR part 60, appendix B.

(ii) During each relative accuracy test run of the CO CEMS, you must be collect emission data for CO concurrently (or within a 30- to 60-minute period) by both the CO CEMS and by Method 10, 10A, or 10B at 40 CFR part 60, appendix A-4. The relative accuracy testing must be at representative operating conditions.

(iii) You must follow the quality assurance procedures (e.g., quarterly accuracy determinations and daily calibration drift tests) of Procedure 1 of appendix F to part 60. The measurement span value of the CO CEMS must be two times the applicable CO emission limit, expressed as a concentration.

(iv) Any CO CEMS that does not comply with § 63.7525(a) cannot be used to meet any requirement in this subpart to demonstrate compliance with a CO emission limit listed in Tables 1, 2, or 11 through 13 to this subpart.

(v) For a new unit, complete the initial performance evaluation no later than July 30, 2013, or 180 days after the date of initial startup, whichever is later. For an existing unit, complete the initial performance evaluation no later than July 29, 2016.

(3) Complete a minimum of one cycle of CO and oxygen CEMS operation (sampling, analyzing, and data recording) for each successive 15-minute period. Collect CO and oxygen data concurrently. Collect at least four CO and oxygen CEMS data values representing the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CEMS calibration, quality assurance, or maintenance activities are being performed.

(4) Reduce the CO CEMS data as specified in § 63.8(g)(2).

(5) Calculate one-hour arithmetic averages, corrected to 3 percent oxygen from each hour of CO CEMS data in parts per million CO concentration. The one-hour arithmetic averages required shall be used to calculate the 30-day or 10-day rolling average emissions. Use Equation 19-19 in section 12.4.1 of Method 19 of 40 CFR part 60, appendix A-7 for calculating the average CO concentration from the hourly values.

(6) For purposes of collecting CO data, operate the CO CEMS as specified in § 63.7535(b). You must use all the data collected during all periods in calculating data averages and assessing compliance, except that you must exclude certain data as specified in § 63.7535(c). Periods when CO data are unavailable may constitute monitoring deviations as specified in § 63.7535(d).

(7) Operate an oxygen trim system with the oxygen level set no lower than the lowest hourly average oxygen concentration measured during the most recent CO performance test as the operating limit for oxygen according to Table 7 to this subpart.

(b) If your boiler or process heater is in the unit designed to burn coal/solid fossil fuel subcategory or the unit designed to burn heavy liquid subcategory and has an average annual heat input rate greater than 250 MMBtu per hour from solid fossil fuel and/or heavy liquid, and you demonstrate compliance with the PM limit instead of the alternative TSM limit, you must install, certify, maintain, and operate a PM CPMS monitoring emissions discharged to the atmosphere and record the output of the system as specified in paragraphs (b)(1) through (4) of this section. As an alternative to use of a PM CPMS to demonstrate compliance with the PM limit, you may choose to use a PM CEMS. If you choose to use a PM CEMS to demonstrate compliance with the PM limit instead of the alternative TSM limit, you must install, certify, maintain, and operate a PM CEMS monitoring emissions discharged to the atmosphere and record the output of the system as specified in paragraph (b)(5) through (8) of this section. For other boilers or process heaters, you may elect to use a PM CPMS or PM CEMS operated in accordance with this section in lieu of using other CMS for monitoring PM compliance (e.g., bag leak detectors, ESP secondary power, PM scrubber pressure). Owners of boilers and process heaters who elect to comply with the alternative TSM limit are not required to install a PM CPMS.

(1) Install, certify, operate, and maintain your PM CPMS according to the procedures in your approved site-specific monitoring plan developed in accordance with § 63.7505(d), the requirements in § 63.7540(a)(9), and paragraphs (b)(1)(i) through (iii) of this section.

(i) The operating principle of the PM CPMS must be based on in-stack or extractive light scatter, light scintillation, beta attenuation, or mass accumulation detection of PM in the exhaust gas or representative exhaust gas sample. The reportable measurement output from the PM CPMS must be expressed as milliamps.

(ii) The PM CPMS must have a cycle time (i.e., period required to complete sampling, measurement, and reporting for each measurement) no longer than 60 minutes.

(iii) The PM CPMS must be capable of detecting and responding to PM concentrations of no greater than 0.5 milligram per actual cubic meter.

(2) For a new unit, complete the initial performance evaluation no later than July 30, 2013, or 180 days after the date of initial startup, whichever is later. For an existing unit, complete the initial performance evaluation no later than July 29, 2016.

(3) Collect PM CPMS hourly average output data for all boiler or process heater operating hours except as indicated in § 63.7535(a) through (d). Express the PM CPMS output as milliamps.

(4) Calculate the arithmetic 30-day rolling average of all of the hourly average PM CPMS output data collected during all boiler or process heater operating hours (milliamps).

(5) Install, certify, operate, and maintain your PM CEMS according to the procedures in your approved site-specific monitoring plan developed in accordance with § 63.7505(d), the requirements in § 63.7540(a)(9), and paragraphs (b)(5)(i) through (iv) of this section.

(i) You shall conduct a performance evaluation of the PM CEMS according to the applicable requirements of § 60.8(e), and Performance Specification 11 at 40 CFR part 60, appendix B of this chapter.

(ii) During each PM correlation testing run of the CEMS required by Performance Specification 11 at 40 CFR part 60, appendix B of this chapter, you shall collect PM and oxygen (or carbon dioxide) data concurrently (or within a 30-to 60-minute period) by both the CEMS and conducting performance tests using Method 5 at 40 CFR part 60, appendix A-3 or Method 17 at 40 CFR part 60, appendix A-6 of this chapter.

(iii) You shall perform quarterly accuracy determinations and daily calibration drift tests in accordance with Procedure 2 at 40 CFR part 60, appendix F of this chapter. You must perform Relative Response Audits annually and perform Response Correlation Audits every 3 years.

(iv) Within 60 days after the date of completing each CEMS relative accuracy test audit or performance test conducted to demonstrate compliance with this subpart, you must submit the relative accuracy test audit data and performance test data to the EPA by successfully submitting the data electronically into the EPA's Central Data Exchange by using the Electronic Reporting Tool (see *http://www.epa.gov/ttn/chief/ert/erttool.html/*).

(6) For a new unit, complete the initial performance evaluation no later than July 30, 2013, or 180 days after the date of initial startup, whichever is later. For an existing unit, complete the initial performance evaluation no later than July 29, 2016.

(7) Collect PM CEMS hourly average output data for all boiler or process heater operating hours except as indicated in § 63.7535(a) through (d).

(8) Calculate the arithmetic 30-day rolling average of all of the hourly average PM CEMS output data collected during all boiler or process heater operating hours.

(c) If you have an applicable opacity operating limit in this rule, and are not otherwise required or elect to install and operate a PM CPMS, PM CEMS, or a bag leak detection system, you must install, operate, certify and maintain each COMS according to the procedures in paragraphs (c)(1) through (7) of this section by the compliance date specified in § 63.7495.

(1) Each COMS must be installed, operated, and maintained according to Performance Specification 1 at appendix B to part 60 of this chapter.

(2) You must conduct a performance evaluation of each COMS according to the requirements in § 63.8(e) and according to Performance Specification 1 at appendix B to part 60 of this chapter.

(3) As specified in § 63.8(c)(4)(i), each COMS must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(4) The COMS data must be reduced as specified in § 63.8(g)(2).

(5) You must include in your site-specific monitoring plan procedures and acceptance criteria for operating and maintaining each COMS according to the requirements in § 63.8(d). At a minimum, the monitoring plan must include a daily calibration drift assessment, a quarterly performance audit, and an annual zero alignment audit of each COMS.

(6) You must operate and maintain each COMS according to the requirements in the monitoring plan and the requirements of § 63.8(e). You must identify periods the COMS is out of control including any periods that the COMS fails to pass a daily calibration drift assessment, a quarterly performance audit, or an annual zero alignment audit. Any 6-minute period for which the monitoring system is out of control and data are not available for a required calculation constitutes a deviation from the monitoring requirements.

(7) You must determine and record all the 6-minute averages (and daily block averages as applicable) collected for periods during which the COMS is not out of control.

(d) If you have an operating limit that requires the use of a CMS other than a PM CPMS or COMS, you must install, operate, and maintain each CMS according to the procedures in paragraphs (d)(1) through (5) of this section by the compliance date specified in § 63.7495.

(1) The CPMS must complete a minimum of one cycle of operation every 15-minutes. You must have a minimum of four successive cycles of operation, one representing each of the four 15-minute periods in an hour, to have a valid hour of data.

(2) You must operate the monitoring system as specified in § 63.7535(b), and comply with the data calculation requirements specified in § 63.7535(c).

(3) Any 15-minute period for which the monitoring system is out-of-control and data are not available for a required calculation constitutes a deviation from the monitoring requirements. Other situations that constitute a monitoring deviation are specified in § 63.7535(d).

(4) You must determine the 30-day rolling average of all recorded readings, except as provided in § 63.7535(c).

(5) You must record the results of each inspection, calibration, and validation check.

(e) If you have an operating limit that requires the use of a flow monitoring system, you must meet the requirements in paragraphs (d) and (e)(1) through (4) of this section.

(1) You must install the flow sensor and other necessary equipment in a position that provides a representative flow.

(2) You must use a flow sensor with a measurement sensitivity of no greater than 2 percent of the design flow rate.

(3) You must minimize, consistent with good engineering practices, the effects of swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(4) You must conduct a flow monitoring system performance evaluation in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(f) If you have an operating limit that requires the use of a pressure monitoring system, you must meet the requirements in paragraphs (d) and (f)(1) through (6) of this section.

(1) Install the pressure sensor(s) in a position that provides a representative measurement of the pressure (*e.g.* , PM scrubber pressure drop).

(2) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion consistent with good engineering practices.

(3) Use a pressure sensor with a minimum tolerance of 1.27 centimeters of water or a minimum tolerance of 1 percent of the pressure monitoring system operating range, whichever is less.

(4) Perform checks at least once each process operating day to ensure pressure measurements are not obstructed (*e.g.* , check for pressure tap pluggage daily).

(5) Conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(6) If at any time the measured pressure exceeds the manufacturer's specified maximum operating pressure range, conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan and confirm that the pressure monitoring system continues to meet the performance

requirements in you monitoring plan. Alternatively, install and verify the operation of a new pressure sensor.

(g) If you have an operating limit that requires a pH monitoring system, you must meet the requirements in paragraphs (d) and (g)(1) through (4) of this section.

(1) Install the pH sensor in a position that provides a representative measurement of scrubber effluent pH.

(2) Ensure the sample is properly mixed and representative of the fluid to be measured.

(3) Conduct a performance evaluation of the pH monitoring system in accordance with your monitoring plan at least once each process operating day.

(4) Conduct a performance evaluation (including a two-point calibration with one of the two buffer solutions having a pH within 1 of the pH of the operating limit) of the pH monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than quarterly.

(h) If you have an operating limit that requires a secondary electric power monitoring system for an electrostatic precipitator (ESP) operated with a wet scrubber, you must meet the requirements in paragraphs (h)(1) and (2) of this section.

(1) Install sensors to measure (secondary) voltage and current to the precipitator collection plates.

(2) Conduct a performance evaluation of the electric power monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(i) If you have an operating limit that requires the use of a monitoring system to measure sorbent injection rate (e.g., weigh belt, weigh hopper, or hopper flow measurement device), you must meet the requirements in paragraphs (d) and (i)(1) through (2) of this section.

(1) Install the system in a position(s) that provides a representative measurement of the total sorbent injection rate.

(2) Conduct a performance evaluation of the sorbent injection rate monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(j) If you are not required to use a PM CPMS and elect to use a fabric filter bag leak detection system to comply with the requirements of this subpart, you must install, calibrate, maintain, and continuously operate the bag leak detection system as specified in paragraphs (j)(1) through (6) of this section.

(1) You must install a bag leak detection sensor(s) in a position(s) that will be representative of the relative or absolute PM loadings for each exhaust stack, roof vent, or compartment (e.g., for a positive pressure fabric filter) of the fabric filter.

(2) Conduct a performance evaluation of the bag leak detection system in accordance with your monitoring plan and consistent with the guidance provided in EPA-454/R-98-015 (incorporated by reference, see § 63.14).

(3) Use a bag leak detection system certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter or less.

(4) Use a bag leak detection system equipped with a device to record continuously the output signal from the sensor.

(5) Use a bag leak detection system equipped with a system that will alert plant operating personnel when an increase in relative PM emissions over a preset level is detected. The alert must easily recognizable (e.g., heard or seen) by plant operating personnel.

(6) Where multiple bag leak detectors are required, the system's instrumentation and alert may be shared among detectors.

(k) For each unit that meets the definition of limited-use boiler or process heater, you must keep fuel use records for the days the boiler or process heater was operating.

(l) For each unit for which you decide to demonstrate compliance with the mercury or HCl emissions limits in Tables 1 or 2 or 11 through 13 of this subpart by use of a CEMS for mercury or HCl, you must install, certify, maintain, and operate a CEMS measuring emissions discharged to the atmosphere and record the output of the system as specified in paragraphs (l)(1) through (8) of this section. For HCl, this option for an affected unit takes effect on the date a final performance specification for a HCl CEMS is published in the FEDERAL REGISTER or the date of approval of a site-specific monitoring plan.

(1) Notify the Administrator one month before starting use of the CEMS, and notify the Administrator one month before stopping use of the CEMS.

(2) Each CEMS shall be installed, certified, operated, and maintained according to the requirements in § 63.7540(a)(14) for a mercury CEMS and § 63.7540(a)(15) for a HCl CEMS.

(3) For a new unit, you must complete the initial performance evaluation of the CEMS by the latest of the dates specified in paragraph (l)(3)(i) through (iii) of this section.

(i) No later than July 30, 2013.

(ii) No later 180 days after the date of initial startup.

(iii) No later 180 days after notifying the Administrator before starting to use the CEMS in place of performance testing or fuel analysis to demonstrate compliance.

(4) For an existing unit, you must complete the initial performance evaluation by the latter of the two dates specified in paragraph (l)(4)(i) and (ii) of this section.

(i) No later than July 29, 2016.

(ii) No later 180 days after notifying the Administrator before starting to use the CEMS in place of performance testing or fuel analysis to demonstrate compliance.

(5) Compliance with the applicable emissions limit shall be determined based on the 30-day rolling average of the hourly arithmetic average emissions rates using the continuous monitoring system outlet data. The 30-day rolling arithmetic average emission rate (lb/MMBtu) shall be calculated using the equations in EPA Reference Method 19 at 40 CFR part 60, appendix A-7, but substituting the mercury or HCl concentration for the pollutant concentrations normally used in Method 19.

(6) Collect CEMS hourly averages for all operating hours on a 30-day rolling average basis. Collect at least four CMS data values representing the four 15-minute periods in an hour, or at least two 15-

minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed.

(7) The one-hour arithmetic averages required shall be expressed in lb/MMBtu and shall be used to calculate the boiler 30-day and 10-day rolling average emissions.

(8) You are allowed to substitute the use of the PM, mercury or HCl CEMS for the applicable fuel analysis, annual performance test, and operating limits specified in Table 4 to this subpart to demonstrate compliance with the PM, mercury or HCl emissions limit, and if you are using an acid gas wet scrubber or dry sorbent injection control technology to comply with the HCl emission limit, you are allowed to substitute the use of a sulfur dioxide (SO_2) CEMS for the applicable fuel analysis, annual performance test, and operating limits specified in Table 4 to this subpart to demonstrate compliance with HCl emissions limit.

(m) If your unit is subject to a HCl emission limit in Tables 1, 2, or 11 through 13 of this subpart and you have an acid gas wet scrubber or dry sorbent injection control technology and you use an SO_2 CEMS, you must install the monitor at the outlet of the boiler or process heater, downstream of all emission control devices, and you must install, certify, operate, and maintain the CEMS according to part 75 of this chapter.

(1) The SO_2 CEMS must be installed by the compliance date specified in § 63.7495.

(2) For on-going quality assurance (QA), the SO_2 CEMS must meet the applicable daily, quarterly, and semiannual or annual requirements in sections 2.1 through 2.3 of appendix B to part 75 of this chapter, with the following addition: You must perform the linearity checks required in section 2.2 of appendix B to part 75 of this chapter if the SO_2 CEMS has a span value of 30 ppm or less.

(3) For a new unit, the initial performance evaluation shall be completed no later than July 30, 2013, or 180 days after the date of initial startup, whichever is later. For an existing unit, the initial performance evaluation shall be completed no later than July 29, 2016.

(4) For purposes of collecting SO_2 data, you must operate the SO_2 CEMS as specified in § 63.7535(b). You must use all the data collected during all periods in calculating data averages and assessing compliance, except that you must exclude certain data as specified in § 63.7535(c). Periods when SO_2 data are unavailable may constitute monitoring deviations as specified in § 63.7535(d).

(5) Collect CEMS hourly averages for all operating hours on a 30-day rolling average basis.

(6) Use only unadjusted, quality-assured SO_2 concentration values in the emissions calculations; do not apply bias adjustment factors to the part 75 SO_2 data and do not use part 75 substitute data values.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7171, Jan. 31, 2013]

§ 63.7530 How do I demonstrate initial compliance with the emission limitations, fuel specifications and work practice standards?

(a) You must demonstrate initial compliance with each emission limit that applies to you by conducting initial performance tests and fuel analyses and establishing operating limits, as applicable, according to § 63.7520, paragraphs (b) and (c) of this section, and Tables 5 and 7 to this subpart. The requirement to conduct a fuel analysis is not applicable for units that burn a single type of fuel, as specified by § 63.7510(a)(2)(i). If applicable, you must also install, operate, and maintain all applicable CMS (including CEMS, COMS, and CPMS) according to § 63.7525.

(b) If you demonstrate compliance through performance testing, you must establish each site-specific operating limit in Table 4 to this subpart that applies to you according to the requirements in § 63.7520, Table 7 to this subpart, and paragraph (b)(4) of this section, as applicable. You must also conduct fuel analyses according to § 63.7521 and establish maximum fuel pollutant input levels according to paragraphs (b)(1) through (3) of this section, as applicable, and as specified in § 63.7510(a)(2). (Note that § 63.7510(a)(2) exempts certain fuels from the fuel analysis requirements.) However, if you switch fuel(s) and cannot show that the new fuel(s) does (do) not increase the chlorine, mercury, or TSM input into the unit through the results of fuel analysis, then you must repeat the performance test to demonstrate compliance while burning the new fuel(s).

(1) You must establish the maximum chlorine fuel input (Clinput) during the initial fuel analysis according to the procedures in paragraphs (b)(1)(i) through (iii) of this section.

(i) You must determine the fuel type or fuel mixture that you could burn in your boiler or process heater that has the highest content of chlorine.

(ii) During the fuel analysis for hydrogen chloride, you must determine the fraction of the total heat input for each fuel type burned (Qi) based on the fuel mixture that has the highest content of chlorine, and the average chlorine concentration of each fuel type burned (Ci).

(iii) You must establish a maximum chlorine input level using Equation 7 of this section.

$$Clinput = \sum_{i=1}^{n} (Ci \times Qi) \quad \text{(Eq. 7)}$$

Where:

Clinput = Maximum amount of chlorine entering the boiler or process heater through fuels burned in units of pounds per million Btu.

Ci = Arithmetic average concentration of chlorine in fuel type, i, analyzed according to § 63.7521, in units of pounds per million Btu.

Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest content of chlorine. If you do not burn multiple fuel types during the performance testing, it is not necessary to determine the value of this term. Insert a value of “1” for Qi.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of chlorine.

(2) You must establish the maximum mercury fuel input level (Mercuryinput) during the initial fuel analysis using the procedures in paragraphs (b)(2)(i) through (iii) of this section.

(i) You must determine the fuel type or fuel mixture that you could burn in your boiler or process heater that has the highest content of mercury.

(ii) During the compliance demonstration for mercury, you must determine the fraction of total heat input for each fuel burned (Qi) based on the fuel mixture that has the highest content of mercury, and the average mercury concentration of each fuel type burned (HGi).

(iii) You must establish a maximum mercury input level using Equation 8 of this section.

$$Mercuryinput = \sum_{i=1}^{n} (HGi \times Qi) \quad \text{(Eq. 8)}$$

Where:

Mercuryinput = Maximum amount of mercury entering the boiler or process heater through fuels burned in units of pounds per million Btu.

HGi = Arithmetic average concentration of mercury in fuel type, i, analyzed according to § 63.7521, in units of pounds per million Btu.

Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest mercury content. If you do not burn multiple fuel types during the performance test, it is not necessary to determine the value of this term. Insert a value of “1” for Qi.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of mercury.

(3) If you opt to comply with the alternative TSM limit, you must establish the maximum TSM fuel input (TSMinput) for solid or liquid fuels during the initial fuel analysis according to the procedures in paragraphs (b)(3)(i) through (iii) of this section.

(i) You must determine the fuel type or fuel mixture that you could burn in your boiler or process heater that has the highest content of TSM.

(ii) During the fuel analysis for TSM, you must determine the fraction of the total heat input for each fuel type burned (Qi) based on the fuel mixture that has the highest content of TSM, and the average TSM concentration of each fuel type burned (TSMi).

(iii) You must establish a maximum TSM input level using Equation 9 of this section.

$$TSMinput = \sum_{i=1}^{n} (TSMi \times Qi) \qquad \text{(Eq. 9)}$$

Where:

TSMinput = Maximum amount of TSM entering the boiler or process heater through fuels burned in units of pounds per million Btu.

TSMi = Arithmetic average concentration of TSM in fuel type, i, analyzed according to § 63.7521, in units of pounds per million Btu.

Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest content of TSM. If you do not burn multiple fuel types during the performance testing, it is not necessary to determine the value of this term. Insert a value of “1” for Qi.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of TSM.

(4) You must establish parameter operating limits according to paragraphs (b)(4)(i) through (ix) of this section. As indicated in Table 4 to this subpart, you are not required to establish and comply with the operating parameter limits when you are using a CEMS to monitor and demonstrate compliance with the applicable emission limit for that control device parameter.

(i) For a wet acid gas scrubber, you must establish the minimum scrubber effluent pH and liquid flow rate as defined in § 63.7575, as your operating limits during the performance test during which you demonstrate compliance with your applicable limit. If you use a wet scrubber and you conduct separate performance tests for HCl and mercury emissions, you must establish one set of minimum scrubber effluent pH, liquid flow rate, and pressure drop operating limits. The minimum scrubber effluent pH operating limit must be established during the HCl performance test. If you conduct multiple performance tests, you must set the minimum liquid flow rate operating limit at the higher of the minimum values established during the performance tests.

(ii) For any particulate control device (e.g., ESP, particulate wet scrubber, fabric filter) for which you use a PM CPMS, you must establish your PM CPMS operating limit and determine compliance with it according to paragraphs (b)(4)(ii)(A) through (F) of this section.

(A) Determine your operating limit as the average PM CPMS output value recorded during the most recent performance test run demonstrating compliance with the filterable PM emission limit or at the PM CPMS output value corresponding to 75 percent of the emission limit if your PM performance test demonstrates compliance below 75 percent of the emission limit. You must verify an existing or establish a new operating limit after each repeated performance test. You must repeat the performance test annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.

(*1*) Your PM CPMS must provide a 4-20 milliamp output and the establishment of its relationship to manual reference method measurements must be determined in units of milliamps.

(*2*) Your PM CPMS operating range must be capable of reading PM concentrations from zero to a level equivalent to at least two times your allowable emission limit. If your PM CPMS is an auto-ranging instrument capable of multiple scales, the primary range of the instrument must be capable of reading PM concentration from zero to a level equivalent to two times your allowable emission limit.

(*3*) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, record and average all milliamp output values from the PM CPMS for the periods corresponding to the compliance test runs (e.g., average all your PM CPMS output values for three corresponding 2-hour Method 5I test runs).

(B) If the average of your three PM performance test runs are below 75 percent of your PM emission limit, you must calculate an operating limit by establishing a relationship of PM CPMS signal to PM concentration using the PM CPMS instrument zero, the average PM CPMS values corresponding to the three compliance test runs, and the average PM concentration from the Method 5 or performance test with the procedures in paragraphs (b)(4)(ii)(B)(*1*) through (*4*) of this section.

(*1*) Determine your instrument zero output with one of the following procedures:

(*i*) Zero point data for *in-situ* instruments should be obtained by removing the instrument from the stack and monitoring ambient air on a test bench.

(*ii*) Zero point data for *extractive* instruments should be obtained by removing the extractive probe from the stack and drawing in clean ambient air.

(*iii*) The zero point may also be established by performing manual reference method measurements when the flue gas is free of PM emissions or contains very low PM concentrations (e.g., when your process is not operating, but the fans are operating or your source is combusting only natural gas) and plotting these with the compliance data to find the zero intercept.

(*iv*) If none of the steps in paragraphs (b)(4)(ii)(B)(*1*)(*i*) through (*iii*) of this section are possible, you must use a zero output value provided by the manufacturer.

(*2*) Determine your PM CPMS instrument average in milliamps, and the average of your corresponding three PM compliance test runs, using equation 10.

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} X_i, \bar{y} = \frac{1}{n}\sum_{i=1}^{n} Y_i \qquad \text{(Eq. 10)}$$

Where:

X_1 = the PM CPMS data points for the three runs constituting the performance test,

Y_1 = the PM concentration value for the three runs constituting the performance test, and

n = the number of data points.

(*3*) With your instrument zero expressed in milliamps, your three run average PM CPMS milliamp value, and your three run average PM concentration from your three compliance tests, determine a relationship of lb/MMBtu per milliamp with equation 11.

$$R = \frac{Y_1}{(X_1 - z)} \qquad \text{(Eq. 11)}$$

Where:

R = the relative lb/MMBtu per milliamp for your PM CPMS,

Y_1 = the three run average lb/MMBtu PM concentration,

X_1 = the three run average milliamp output from you PM CPMS, and

z = the milliamp equivalent of your instrument zero determined from (B)(i).

(*4*) Determine your source specific 30-day rolling average operating limit using the lb/MMBtu per milliamp value from Equation 11 in equation 12, below. This sets your operating limit at the PM CPMS output value corresponding to 75 percent of your emission limit.

$$O_l = z + \frac{0.75(L)}{R} \qquad \text{(Eq. 12)}$$

Where:

O_l = the operating limit for your PM CPMS on a 30-day rolling average, in milliamps.

L = your source emission limit expressed in lb/MMBtu,

z = your instrument zero in milliamps, determined from (B)(i), and

R = the relative lb/MMBtu per milliamp for your PM CPMS, from Equation 11.

(C) If the average of your three PM compliance test runs is at or above 75 percent of your PM emission limit you must determine your 30-day rolling average operating limit by averaging the PM CPMS milliamp output corresponding to your three PM performance test runs that demonstrate compliance with the emission limit using equation 13 and you must submit all compliance test and PM CPMS data according to the reporting requirements in paragraph (b)(4)(ii)(F) of this section.

$$O_h = \frac{1}{n}\sum_{i=1}^{n} X_1 \qquad \text{(Eq. 13)}$$

Where:

X_1 = the PM CPMS data points for all runs i,

n = the number of data points, and

O_h = your site specific operating limit, in milliamps.

(D) To determine continuous compliance, you must record the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps) on a 30-day rolling average basis, updated at the end of each new operating hour. Use Equation 14 to determine the 30-day rolling average.

$$30-\mathrm{day} = \frac{\sum_{i=1}^{n} Hpvi}{n} \qquad \text{(Eq. 14)}$$

Where:

30-day = 30-day average.

Hpvi = is the hourly parameter value for hour i

n = is the number of valid hourly parameter values collected over the previous 720 operating hours.

(E) Use EPA Method 5 of appendix A to part 60 of this chapter to determine PM emissions. For each performance test, conduct three separate runs under the conditions that exist when the affected source is operating at the highest load or capacity level reasonably expected to occur. Conduct each test run to collect a minimum sample volume specified in Tables 1, 2, or 11 through 13 to this subpart, as applicable, for determining compliance with a new source limit or an existing source limit. Calculate the average of the results from three runs to determine compliance. You need not determine the PM collected in the impingers (“back half”) of the Method 5 particulate sampling train to demonstrate compliance with the PM standards of this subpart. This shall not preclude the permitting authority from requiring a determination of the “back half” for other purposes.

(F) For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (e.g. beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp signals corresponding to each PM compliance test run. (iii) For a particulate wet scrubber, you must establish the minimum pressure drop and liquid flow rate as defined in § 63.7575, as your operating limits during the three-run performance test during which you demonstrate compliance with your applicable limit. If you use a wet scrubber and you conduct separate performance tests for PM and TSM emissions, you must establish one set of minimum scrubber liquid flow rate and pressure drop operating limits. The minimum scrubber effluent pH operating limit must be established during the HCl performance test. If you conduct multiple performance tests, you must set the minimum liquid flow rate and pressure drop operating limits at the higher of the minimum values established during the performance tests.

(iii) For an electrostatic precipitator (ESP) operated with a wet scrubber, you must establish the minimum total secondary electric power input, as defined in § 63.7575, as your operating limit during the three-run performance test during which you demonstrate compliance with your applicable limit. (These operating limits do not apply to ESP that are operated as dry controls without a wet scrubber.)

(iv) For a dry scrubber, you must establish the minimum sorbent injection rate for each sorbent, as defined in § 63.7575, as your operating limit during the three-run performance test during which you demonstrate compliance with your applicable limit.

(v) For activated carbon injection, you must establish the minimum activated carbon injection rate, as defined in § 63.7575, as your operating limit during the three-run performance test during which you demonstrate compliance with your applicable limit.

(vi) The operating limit for boilers or process heaters with fabric filters that demonstrate continuous compliance through bag leak detection systems is that a bag leak detection system be installed according to the requirements in § 63.7525, and that each fabric filter must be operated such that the bag leak detection system alert is not activated more than 5 percent of the operating time during a 6-month period.

(vii) For a minimum oxygen level, if you conduct multiple performance tests, you must set the minimum oxygen level at the lower of the minimum values established during the performance tests.

(viii) The operating limit for boilers or process heaters that demonstrate continuous compliance with the HCl emission limit using a SO_2 CEMS is to install and operate the SO_2 according to the requirements in § 63.7525(m) establish a maximum SO_2 emission rate equal to the highest hourly average SO_2 measurement during the most recent three-run performance test for HCl.

(c) If you elect to demonstrate compliance with an applicable emission limit through fuel analysis, you must conduct fuel analyses according to § 63.7521 and follow the procedures in paragraphs (c)(1) through (5) of this section.

(1) If you burn more than one fuel type, you must determine the fuel mixture you could burn in your boiler or process heater that would result in the maximum emission rates of the pollutants that you elect to demonstrate compliance through fuel analysis.

(2) You must determine the 90th percentile confidence level fuel pollutant concentration of the composite samples analyzed for each fuel type using the one-sided t-statistic test described in Equation 15 of this section.

$$P90 = mean + (SD \times t) \qquad \text{(Eq. 15)}$$

Where:

P90 = 90th percentile confidence level pollutant concentration, in pounds per million Btu.

Mean = Arithmetic average of the fuel pollutant concentration in the fuel samples analyzed according to § 63.7521, in units of pounds per million Btu.

SD = Standard deviation of the mean of pollutant concentration in the fuel samples analyzed according to § 63.7521, in units of pounds per million Btu. SD is calculated as the sample standard deviation divided by the square root of the number of samples.

t = t distribution critical value for 90th percentile ($t_{0.1}$) probability for the appropriate degrees of freedom (number of samples minus one) as obtained from a t-Distribution Critical Value Table.

(3) To demonstrate compliance with the applicable emission limit for HCl, the HCl emission rate that you calculate for your boiler or process heater using Equation 16 of this section must not exceed the applicable emission limit for HCl.

$$HCl = \sum_{i=1}^{n} (Ci90 \times Qi \times 1.028) \qquad \text{(Eq. 16)}$$

Where:

HCl = HCl emission rate from the boiler or process heater in units of pounds per million Btu.

Ci90 = 90th percentile confidence level concentration of chlorine in fuel type, i, in units of pounds per million Btu as calculated according to Equation 11 of this section.

Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest content of chlorine. If you do not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of “1” for Qi.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of chlorine.

1.028 = Molecular weight ratio of HCl to chlorine.

(4) To demonstrate compliance with the applicable emission limit for mercury, the mercury emission rate that you calculate for your boiler or process heater using Equation 17 of this section must not exceed the applicable emission limit for mercury.

$$Mercury = \sum_{i=1}^{n} \left(Hgi90 \times Qi\right) \quad \text{(Eq. 17)}$$

Where:

Mercury = Mercury emission rate from the boiler or process heater in units of pounds per million Btu.

Hgi90 = 90th percentile confidence level concentration of mercury in fuel, i, in units of pounds per million Btu as calculated according to Equation 11 of this section.

Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest mercury content. If you do not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of “1” for Qi.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest mercury content.

(5) To demonstrate compliance with the applicable emission limit for TSM for solid or liquid fuels, the TSM emission rate that you calculate for your boiler or process heater from solid fuels using Equation 18 of this section must not exceed the applicable emission limit for TSM.

$$Metals = \sum_{i=1}^{n} \left(TSM90i \times Qi\right) \quad \text{(Eq. 18)}$$

Where:

Metals = TSM emission rate from the boiler or process heater in units of pounds per million Btu.

TSMi90 = 90th percentile confidence level concentration of TSM in fuel, i, in units of pounds per million Btu as calculated according to Equation 11 of this section.

Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest TSM content. If you do not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of “1” for Qi.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest TSM content.

(d) If you own or operate an existing unit with a heat input capacity of less than 10 million Btu per hour or a unit in the unit designed to burn gas 1 subcategory, you must submit a signed statement in the Notification of Compliance Status report that indicates that you conducted a tune-up of the unit.

(e) You must include with the Notification of Compliance Status a signed certification that the energy assessment was completed according to Table 3 to this subpart and is an accurate depiction of your facility at the time of the assessment.

(f) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.7545(e).

(g) If you elect to demonstrate that a gaseous fuel meets the specifications of another gas 1 fuel as defined in § 63.7575, you must conduct an initial fuel specification analyses according to § 63.7521(f) through (i) and according to the frequency listed in § 63.7540(c) and maintain records of the results of the testing as outlined in § 63.7555(g). For samples where the initial mercury specification has not been exceeded, you will include a signed certification with the Notification of Compliance Status that the initial fuel specification test meets the gas specification outlined in the definition of other gas 1 fuels.

(h) If you own or operate a unit subject to emission limits in Tables 1 or 2 or 11 through 13 to this subpart, you must meet the work practice standard according to Table 3 of this subpart. During startup and shutdown, you must only follow the work practice standards according to item 5 of Table 3 of this subpart.

(i) If you opt to comply with the alternative SO_2 CEMS operating limit in Tables 4 and 8 to this subpart, you may do so only if your affected boiler or process heater:

(1) Has a system using wet scrubber or dry sorbent injection and SO_2 CEMS installed on the unit; and

(2) At all times, you operate the wet scrubber or dry sorbent injection for acid gas control on the unit consistent with § 63.7500(a)(3); and

(3) You establish a unit-specific maximum SO_2 operating limit by collecting the minimum hourly SO_2 emission rate on the SO_2 CEMS during the paired 3-run test for HCl. The maximum SO_2 operating limit is equal to the highest hourly average SO_2 concentration measured during the most recent HCl performance test.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7174, Jan. 31, 2013]

§ 63.7533 Can I use efficiency credits earned from implementation of energy conservation measures to comply with this subpart?

(a) If you elect to comply with the alternative equivalent output-based emission limits, instead of the heat input-based limits listed in Table 2 to this subpart, and you want to take credit for implementing energy conservation measures identified in an energy assessment, you may demonstrate compliance using efficiency credits according to the procedures in this section. You may use this compliance approach for an existing affected boiler for demonstrating initial compliance according to § 63.7522(e) and for demonstrating monthly compliance according to § 63.7522(f). Owners or operators using this compliance approach must establish an emissions benchmark, calculate and document the efficiency credits, develop an Implementation Plan, comply with the general reporting requirements, and apply the efficiency credit according to the procedures in paragraphs (b) through (f) of this section. You cannot use this compliance approach for a new or reconstructed affected boiler. Additional guidance from the Department of Energy on efficiency credits is available at: *http://www.epa.gov/ttn/atw/boiler/boilerpg.html* .

(b) For each existing affected boiler for which you intend to apply emissions credits, establish a benchmark from which emission reduction credits may be generated by determining the actual annual fuel heat input to the affected boiler before initiation of an energy conservation activity to reduce energy demand (*i.e.,* fuel usage) according to paragraphs (b)(1) through (4) of this section. The benchmark shall be expressed in trillion Btu per year heat input.

(1) The benchmark from which efficiency credits may be generated shall be determined by using the most representative, accurate, and reliable process available for the source. The benchmark shall be

established for a one-year period before the date that an energy demand reduction occurs, unless it can be demonstrated that a different time period is more representative of historical operations.

(2) Determine the starting point from which to measure progress. Inventory all fuel purchased and generated on-site (off-gases, residues) in physical units (MMBtu, million cubic feet, etc.).

(3) Document all uses of energy from the affected boiler. Use the most recent data available.

(4) Collect non-energy related facility and operational data to normalize, if necessary, the benchmark to current operations, such as building size, operating hours, etc. If possible, use actual data that are current and timely rather than estimated data.

(c) Efficiency credits can be generated if the energy conservation measures were implemented after January 1, 2008 and if sufficient information is available to determine the appropriate value of credits.

(1) The following emission points cannot be used to generate efficiency credits:

(i) Energy conservation measures implemented on or before January 1, 2008, unless the level of energy demand reduction is increased after January 1, 2008, in which case credit will be allowed only for change in demand reduction achieved after January 1, 2008.

(ii) Efficiency credits on shut-down boilers. Boilers that are shut down cannot be used to generate credits unless the facility provides documentation linking the permanent shutdown to energy conservation measures identified in the energy assessment. In this case, the bench established for the affected boiler to which the credits from the shutdown will be applied must be revised to include the benchmark established for the shutdown boiler.

(2) For all points included in calculating emissions credits, the owner or operator shall:

(i) Calculate annual credits for all energy demand points. Use Equation 19 to calculate credits. Energy conservation measures that meet the criteria of paragraph (c)(1) of this section shall not be included, except as specified in paragraph (c)(1)(i) of this section.

(3) Credits are generated by the difference between the benchmark that is established for each affected boiler, and the actual energy demand reductions from energy conservation measures implemented after January 1, 2008. Credits shall be calculated using Equation 19 of this section as follows:

(i) The overall equation for calculating credits is:

$$ECredits = \left(\sum_{i=1}^{n} EIS_{iactual}\right) \div EI_{baseline} \quad \text{(Eq. 19)}$$

Where:

ECredits = Energy Input Savings for all energy conservation measures implemented for an affected boiler, expressed as a decimal fraction of the baseline energy input.

$EIS_{iactual}$ = Energy Input Savings for each energy conservation measure, i, implemented for an affected boiler, million Btu per year.

$EI_{baseline}$ = Energy Input baseline for the affected boiler, million Btu per year.

n = Number of energy conservation measures included in the efficiency credit for the affected boiler.

(ii) [Reserved]

(d) The owner or operator shall develop, and submit for approval upon request by the Administrator, an Implementation Plan containing all of the information required in this paragraph for all boilers to be included in an efficiency credit approach. The Implementation Plan shall identify all existing affected boilers to be included in applying the efficiency credits. The Implementation Plan shall include a description of the energy conservation measures implemented and the energy savings generated from each measure and an explanation of the criteria used for determining that savings. If requested, you must submit the implementation plan for efficiency credits to the Administrator for review and approval no later than 180 days before the date on which the facility intends to demonstrate compliance using the efficiency credit approach.

(e) The emissions rate as calculated using Equation 20 of this section from each existing boiler participating in the efficiency credit option must be in compliance with the limits in Table 2 to this subpart at all times the affected unit is operating, following the compliance date specified in § 63.7495.

(f) You must use Equation 20 of this section to demonstrate initial compliance by demonstrating that the emissions from the affected boiler participating in the efficiency credit compliance approach do not exceed the emission limits in Table 2 to this subpart.

$$E_{adj} = E_m \times (1 - ECredits) \qquad \text{(Eq. 20)}$$

Where:

E_{adj} = Emission level adjusted by applying the efficiency credits earned, lb per million Btu steam output (or lb per MWh) for the affected boiler.

E_m = Emissions measured during the performance test, lb per million Btu steam output (or lb per MWh) for the affected boiler.

ECredits = Efficiency credits from Equation 19 for the affected boiler.

(g) As part of each compliance report submitted as required under § 63.7550, you must include documentation that the energy conservation measures implemented continue to generate the credit for use in demonstrating compliance with the emission limits.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7178, Jan. 31, 2013]

Continuous Compliance Requirements

§ 63.7535 Is there a minimum amount of monitoring data I must obtain?

(a) You must monitor and collect data according to this section and the site-specific monitoring plan required by § 63.7505(d).

(b) You must operate the monitoring system and collect data at all required intervals at all times that each boiler or process heater is operating and compliance is required, except for periods of monitoring system malfunctions or out of control periods (see § 63.8(c)(7) of this part), and required monitoring system quality assurance or control activities, including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in your site-specific monitoring plan. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to complete monitoring system repairs in response to monitoring system malfunctions or out-of-control periods and to return the monitoring system to operation as expeditiously as practicable.

(c) You may not use data recorded during monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or control activities in data averages and calculations used to report emissions or operating levels. You must record and make available upon request results of CMS performance audits and dates and duration of periods when the CMS is out of control to completion of the corrective actions necessary to return the CMS to operation consistent with your site-specific monitoring plan. You must use all the data collected during all other periods in assessing compliance and the operation of the control device and associated control system.

(d) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits, calibration checks, and required zero and span adjustments), failure to collect required data is a deviation of the monitoring requirements. In calculating monitoring results, do not use any data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities. You must calculate monitoring results using all other monitoring data collected while the process is operating. You must report all periods when the monitoring system is out of control in your annual report.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7179, Jan. 31, 2013]

§ 63.7540 How do I demonstrate continuous compliance with the emission limitations, fuel specifications and work practice standards?

(a) You must demonstrate continuous compliance with each emission limit in Tables 1 and 2 or 11 through 13 to this subpart, the work practice standards in Table 3 to this subpart, and the operating limits in Table 4 to this subpart that applies to you according to the methods specified in Table 8 to this subpart and paragraphs (a)(1) through (19) of this section.

(1) Following the date on which the initial compliance demonstration is completed or is required to be completed under §§ 63.7 and 63.7510, whichever date comes first, operation above the established maximum or below the established minimum operating limits shall constitute a deviation of established operating limits listed in Table 4 of this subpart except during performance tests conducted to determine compliance with the emission limits or to establish new operating limits. Operating limits must be confirmed or reestablished during performance tests.

(2) As specified in § 63.7550(c), you must keep records of the type and amount of all fuels burned in each boiler or process heater during the reporting period to demonstrate that all fuel types and mixtures of fuels burned would result in either of the following:

(i) Lower emissions of HCl, mercury, and TSM than the applicable emission limit for each pollutant, if you demonstrate compliance through fuel analysis.

(ii) Lower fuel input of chlorine, mercury, and TSM than the maximum values calculated during the last performance test, if you demonstrate compliance through performance testing.

(3) If you demonstrate compliance with an applicable HCl emission limit through fuel analysis for a solid or liquid fuel and you plan to burn a new type of solid or liquid fuel, you must recalculate the HCl emission rate using Equation 12 of § 63.7530 according to paragraphs (a)(3)(i) through (iii) of this section. You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the HCl emission rate.

(i) You must determine the chlorine concentration for any new fuel type in units of pounds per million Btu, based on supplier data or your own fuel analysis, according to the provisions in your site-specific fuel analysis plan developed according to § 63.7521(b).

(ii) You must determine the new mixture of fuels that will have the highest content of chlorine.

(iii) Recalculate the HCl emission rate from your boiler or process heater under these new conditions using Equation 12 of § 63.7530. The recalculated HCl emission rate must be less than the applicable emission limit.

(4) If you demonstrate compliance with an applicable HCl emission limit through performance testing and you plan to burn a new type of fuel or a new mixture of fuels, you must recalculate the maximum chlorine input using Equation 7 of § 63.7530. If the results of recalculating the maximum chlorine input using Equation 7 of § 63.7530 are greater than the maximum chlorine input level established during the previous performance test, then you must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in § 63.7520 to demonstrate that the HCl emissions do not exceed the emission limit. You must also establish new operating limits based on this performance test according to the procedures in § 63.7530(b). In recalculating the maximum chlorine input and establishing the new operating limits, you are not required to conduct fuel analyses for and include the fuels described in § 63.7510(a)(2)(i) through (iii).

(5) If you demonstrate compliance with an applicable mercury emission limit through fuel analysis, and you plan to burn a new type of fuel, you must recalculate the mercury emission rate using Equation 13 of § 63.7530 according to the procedures specified in paragraphs (a)(5)(i) through (iii) of this section. You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the mercury emission rate.

(i) You must determine the mercury concentration for any new fuel type in units of pounds per million Btu, based on supplier data or your own fuel analysis, according to the provisions in your site-specific fuel analysis plan developed according to § 63.7521(b).

(ii) You must determine the new mixture of fuels that will have the highest content of mercury.

(iii) Recalculate the mercury emission rate from your boiler or process heater under these new conditions using Equation 13 of § 63.7530. The recalculated mercury emission rate must be less than the applicable emission limit.

(6) If you demonstrate compliance with an applicable mercury emission limit through performance testing, and you plan to burn a new type of fuel or a new mixture of fuels, you must recalculate the maximum mercury input using Equation 8 of § 63.7530. If the results of recalculating the maximum mercury input using Equation 8 of § 63.7530 are higher than the maximum mercury input level established during the previous performance test, then you must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in § 63.7520 to demonstrate that the mercury emissions do not exceed the emission limit. You must also establish new operating limits based on this performance test according to the procedures in § 63.7530(b). You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the mercury emission rate.

(7) If your unit is controlled with a fabric filter, and you demonstrate continuous compliance using a bag leak detection system, you must initiate corrective action within 1 hour of a bag leak detection system alert and complete corrective actions as soon as practical, and operate and maintain the fabric filter system such that the periods which would cause an alert are no more than 5 percent of the operating time

during a 6-month period. You must also keep records of the date, time, and duration of each alert, the time corrective action was initiated and completed, and a brief description of the cause of the alert and the corrective action taken. You must also record the percent of the operating time during each 6-month period that the conditions exist for an alert. In calculating this operating time percentage, if inspection of the fabric filter demonstrates that no corrective action is required, no alert time is counted. If corrective action is required, each alert shall be counted as a minimum of 1 hour. If you take longer than 1 hour to initiate corrective action, the alert time shall be counted as the actual amount of time taken to initiate corrective action.

(8) To demonstrate compliance with the applicable alternative CO CEMS emission limit listed in Tables 1, 2, or 11 through 13 to this subpart, you must meet the requirements in paragraphs (a)(8)(i) through (iv) of this section.

(i) Continuously monitor CO according to §§ 63.7525(a) and 63.7535.

(ii) Maintain a CO emission level below or at your applicable alternative CO CEMS-based standard in Tables 1 or 2 or 11 through 13 to this subpart at all times the affected unit is operating.

(iii) Keep records of CO levels according to § 63.7555(b).

(iv) You must record and make available upon request results of CO CEMS performance audits, dates and duration of periods when the CO CEMS is out of control to completion of the corrective actions necessary to return the CO CEMS to operation consistent with your site-specific monitoring plan.

(9) The owner or operator of a boiler or process heater using a PM CPMS or a PM CEMS to meet requirements of this subpart shall install, certify, operate, and maintain the PM CPMS or PM CEMS in accordance with your site-specific monitoring plan as required in § 63.7505(d).

(10) If your boiler or process heater has a heat input capacity of 10 million Btu per hour or greater, you must conduct an annual tune-up of the boiler or process heater to demonstrate continuous compliance as specified in paragraphs (a)(10)(i) through (vi) of this section. This frequency does not apply to limited-use boilers and process heaters, as defined in § 63.7575, or units with continuous oxygen trim systems that maintain an optimum air to fuel ratio.

(i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may delay the burner inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the burner inspection until the first outage, not to exceed 36 months from the previous inspection. At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;

(ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

(iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection;

(iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject;

(v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and

(vi) Maintain on-site and submit, if requested by the Administrator, an annual report containing the information in paragraphs (a)(10)(vi)(A) through (C) of this section,

(A) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;

(B) A description of any corrective actions taken as a part of the tune-up; and

(C) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.

(11) If your boiler or process heater has a heat input capacity of less than 10 million Btu per hour (except as specified in paragraph (a)(12) of this section), you must conduct a biennial tune-up of the boiler or process heater as specified in paragraphs (a)(10)(i) through (vi) of this section to demonstrate continuous compliance.

(12) If your boiler or process heater has a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour and the unit is in the units designed to burn gas 1; units designed to burn gas 2 (other); or units designed to burn light liquid subcategories, or meets the definition of limited-use boiler or process heater in § 63.7575, you must conduct a tune-up of the boiler or process heater every 5 years as specified in paragraphs (a)(10)(i) through (vi) of this section to demonstrate continuous compliance. You may delay the burner inspection specified in paragraph (a)(10)(i) of this section until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months.

(13) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.

(14) If you are using a CEMS measuring mercury emissions to meet requirements of this subpart you must install, certify, operate, and maintain the mercury CEMS as specified in paragraphs (a)(14)(i) and (ii) of this section.

(i) Operate the mercury CEMS in accordance with performance specification 12A of 40 CFR part 60, appendix B or operate a sorbent trap based integrated monitor in accordance with performance specification 12B of 40 CFR part 60, appendix B. The duration of the performance test must be the maximum of 30 unit operating days or 720 hours. For each day in which the unit operates, you must obtain hourly mercury concentration data, and stack gas volumetric flow rate data.

(ii) If you are using a mercury CEMS, you must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the mercury mass emissions rate to the atmosphere according to the requirements of performance specifications 6 and 12A of 40 CFR part 60, appendix B, and quality assurance procedure 6 of 40 CFR part 60, appendix F.

(15) If you are using a CEMS to measure HCl emissions to meet requirements of this subpart, you must install, certify, operate, and maintain the HCl CEMS as specified in paragraphs (a)(15)(i) and (ii) of this section. This option for an affected unit takes effect on the date a final performance specification for

an HCl CEMS is published in the FEDERAL REGISTER or the date of approval of a site-specific monitoring plan.

(i) Operate the continuous emissions monitoring system in accordance with the applicable performance specification in 40 CFR part 60, appendix B. The duration of the performance test must be the maximum of 30 unit operating days or 720 hours. For each day in which the unit operates, you must obtain hourly HCl concentration data, and stack gas volumetric flow rate data.

(ii) If you are using a HCl CEMS, you must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the HCl mass emissions rate to the atmosphere according to the requirements of the applicable performance specification of 40 CFR part 60, appendix B, and the quality assurance procedures of 40 CFR part 60, appendix F.

(16) If you demonstrate compliance with an applicable TSM emission limit through performance testing, and you plan to burn a new type of fuel or a new mixture of fuels, you must recalculate the maximum TSM input using Equation 9 of § 63.7530. If the results of recalculating the maximum TSM input using Equation 9 of § 63.7530 are higher than the maximum total selected input level established during the previous performance test, then you must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in § 63.7520 to demonstrate that the TSM emissions do not exceed the emission limit. You must also establish new operating limits based on this performance test according to the procedures in § 63.7530(b). You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the TSM emission rate.

(17) If you demonstrate compliance with an applicable TSM emission limit through fuel analysis for solid or liquid fuels, and you plan to burn a new type of fuel, you must recalculate the TSM emission rate using Equation 14 of § 63.7530 according to the procedures specified in paragraphs (a)(5)(i) through (iii) of this section. You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the TSM emission rate.

(i) You must determine the TSM concentration for any new fuel type in units of pounds per million Btu, based on supplier data or your own fuel analysis, according to the provisions in your site-specific fuel analysis plan developed according to § 63.7521(b).

(ii) You must determine the new mixture of fuels that will have the highest content of TSM.

(iii) Recalculate the TSM emission rate from your boiler or process heater under these new conditions using Equation 14 of § 63.7530. The recalculated TSM emission rate must be less than the applicable emission limit.

(18) If you demonstrate continuous PM emissions compliance with a PM CPMS you will use a PM CPMS to establish a site-specific operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit. You will conduct your performance test using the test method criteria in Table 5 of this subpart. You will use the PM CPMS to demonstrate continuous compliance with this operating limit. You must repeat the performance test annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.

(i) To determine continuous compliance, you must record the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps) on a 30-day rolling average basis, updated at the end of each new boiler or process heater operating hour.

(ii) For any deviation of the 30-day rolling PM CPMS average value from the established operating parameter limit, you must:

(A) Within 48 hours of the deviation, visually inspect the air pollution control device (APCD);

(B) If inspection of the APCD identifies the cause of the deviation, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and

(C) Within 30 days of the deviation or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the CPMS operating limit. You are not required to conduct additional testing for any deviations that occur between the time of the original deviation and the PM emissions compliance test required under this paragraph.

(iii) PM CPMS deviations from the operating limit leading to more than four required performance tests in a 12-month operating period constitute a separate violation of this subpart.

(19) If you choose to comply with the PM filterable emissions limit by using PM CEMS you must install, certify, operate, and maintain a PM CEMS and record the output of the PM CEMS as specified in paragraphs (a)(19)(i) through (vii) of this section. The compliance limit will be expressed as a 30-day rolling average of the numerical emissions limit value applicable for your unit in Tables 1 or 2 or 11 through 13 of this subpart.

(i) Install and certify your PM CEMS according to the procedures and requirements in Performance Specification 11—Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources in Appendix B to part 60 of this chapter, using test criteria outlined in Table V of this rule. The reportable measurement output from the PM CEMS must be expressed in units of the applicable emissions limit (e.g., lb/MMBtu, lb/MWh).

(ii) Operate and maintain your PM CEMS according to the procedures and requirements in Procedure 2— Quality Assurance Requirements for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources in Appendix F to part 60 of this chapter.

(A) You must conduct the relative response audit (RRA) for your PM CEMS at least once annually.

(B) You must conduct the relative correlation audit (RCA) for your PM CEMS at least once every 3 years.

(iii) Collect PM CEMS hourly average output data for all boiler operating hours except as indicated in paragraph (i) of this section.

(iv) Calculate the arithmetic 30-day rolling average of all of the hourly average PM CEMS output data collected during all nonexempt boiler or process heater operating hours.

(v) You must collect data using the PM CEMS at all times the unit is operating and at the intervals specified this paragraph (a), except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities.

(vi) You must use all the data collected during all boiler or process heater operating hours in assessing the compliance with your operating limit except:

(A) Any data collected during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities conducted during monitoring system malfunctions in calculations and report any such periods in your annual deviation report;

(B) Any data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, repairs associated with periods when the monitoring system is out of control, or required monitoring system quality assurance or control activities conducted during out of control periods in calculations used to report emissions or operating levels and report any such periods in your annual deviation report;

(C) Any data recorded during periods of startup or shutdown.

(vii) You must record and make available upon request results of PM CEMS system performance audits, dates and duration of periods when the PM CEMS is out of control to completion of the corrective actions necessary to return the PM CEMS to operation consistent with your site-specific monitoring plan.

(b) You must report each instance in which you did not meet each emission limit and operating limit in Tables 1 through 4 or 11 through 13 to this subpart that apply to you. These instances are deviations from the emission limits or operating limits, respectively, in this subpart. These deviations must be reported according to the requirements in § 63.7550.

(c) If you elected to demonstrate that the unit meets the specification for mercury for the unit designed to burn gas 1 subcategory, you must follow the sampling frequency specified in paragraphs (c)(1) through (4) of this section and conduct this sampling according to the procedures in § 63.7521(f) through (i).

(1) If the initial mercury constituents in the gaseous fuels are measured to be equal to or less than half of the mercury specification as defined in § 63.7575, you do not need to conduct further sampling.

(2) If the initial mercury constituents are greater than half but equal to or less than 75 percent of the mercury specification as defined in § 63.7575, you will conduct semi-annual sampling. If 6 consecutive semi-annual fuel analyses demonstrate 50 percent or less of the mercury specification, you do not need to conduct further sampling. If any semi-annual sample exceeds 75 percent of the mercury specification, you must return to monthly sampling for that fuel, until 12 months of fuel analyses again are less than 75 percent of the compliance level.

(3) If the initial mercury constituents are greater than 75 percent of the mercury specification as defined in § 63.7575, you will conduct monthly sampling. If 12 consecutive monthly fuel analyses demonstrate 75 percent or less of the mercury specification, you may decrease the fuel analysis frequency to semi-annual for that fuel.

(4) If the initial sample exceeds the mercury specification as defined in § 63.7575, each affected boiler or process heater combusting this fuel is not part of the unit designed to burn gas 1 subcategory and must be in compliance with the emission and operating limits for the appropriate subcategory. You may elect to conduct additional monthly sampling while complying with these emissions and operating limits to demonstrate that the fuel qualifies as another gas 1 fuel. If 12 consecutive monthly fuel analyses samples are at or below the mercury specification as defined in § 63.7575, each affected boiler or process heater combusting the fuel can elect to switch back into the unit designed to burn gas 1 subcategory until the mercury specification is exceeded.

(d) For startup and shutdown, you must meet the work practice standards according to item 5 of Table 3 of this subpart.

[78 FR 7179, Jan. 31, 2013]

§ 63.7541 How do I demonstrate continuous compliance under the emissions averaging provision?

(a) Following the compliance date, the owner or operator must demonstrate compliance with this subpart on a continuous basis by meeting the requirements of paragraphs (a)(1) through (5) of this section.

(1) For each calendar month, demonstrate compliance with the average weighted emissions limit for the existing units participating in the emissions averaging option as determined in § 63.7522(f) and (g).

(2) You must maintain the applicable opacity limit according to paragraphs (a)(2)(i) and (ii) of this section.

(i) For each existing unit participating in the emissions averaging option that is equipped with a dry control system and not vented to a common stack, maintain opacity at or below the applicable limit.

(ii) For each group of units participating in the emissions averaging option where each unit in the group is equipped with a dry control system and vented to a common stack that does not receive emissions from non-affected units, maintain opacity at or below the applicable limit at the common stack.

(3) For each existing unit participating in the emissions averaging option that is equipped with a wet scrubber, maintain the 30-day rolling average parameter values at or above the operating limits established during the most recent performance test.

(4) For each existing unit participating in the emissions averaging option that has an approved alternative operating parameter, maintain the 30-day rolling average parameter values consistent with the approved monitoring plan.

(5) For each existing unit participating in the emissions averaging option venting to a common stack configuration containing affected units from other subcategories, maintain the appropriate operating limit for each unit as specified in Table 4 to this subpart that applies.

(b) Any instance where the owner or operator fails to comply with the continuous monitoring requirements in paragraphs (a)(1) through (5) of this section is a deviation.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7182, Jan. 31, 2013]

Notification, Reports, and Records

§ 63.7545 What notifications must I submit and when?

(a) You must submit to the Administrator all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (6), and 63.9(b) through (h) that apply to you by the dates specified.

(b) As specified in § 63.9(b)(2), if you startup your affected source before January 31, 2013, you must submit an Initial Notification not later than 120 days after January 31, 2013.

(c) As specified in § 63.9(b)(4) and (5), if you startup your new or reconstructed affected source on or after January 31, 2013, you must submit an Initial Notification not later than 15 days after the actual date of startup of the affected source.

(d) If you are required to conduct a performance test you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin.

(e) If you are required to conduct an initial compliance demonstration as specified in § 63.7530, you must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii). For the initial compliance demonstration for each boiler or process heater, you must submit the Notification of Compliance Status, including all performance test results and fuel analyses, before the close of business on the 60th day following the completion of all performance test and/or other initial compliance demonstrations for all boiler or process heaters at the facility according to § 63.10(d)(2). The Notification of Compliance Status report must contain all the information specified in paragraphs (e)(1) through (8), as applicable. If you are not required to conduct an initial compliance demonstration as specified in § 63.7530(a), the Notification of Compliance Status must only contain the information specified in paragraphs (e)(1) and (8).

(1) A description of the affected unit(s) including identification of which subcategories the unit is in, the design heat input capacity of the unit, a description of the add-on controls used on the unit to comply with this subpart, description of the fuel(s) burned, including whether the fuel(s) were a secondary material determined by you or the EPA through a petition process to be a non-waste under § 241.3 of this chapter, whether the fuel(s) were a secondary material processed from discarded non-hazardous secondary materials within the meaning of § 241.3 of this chapter, and justification for the selection of fuel(s) burned during the compliance demonstration.

(2) Summary of the results of all performance tests and fuel analyses, and calculations conducted to demonstrate initial compliance including all established operating limits, and including:

(i) Identification of whether you are complying with the PM emission limit or the alternative TSM emission limit.

(ii) Identification of whether you are complying with the output-based emission limits or the heat input-based (i.e., lb/MMBtu or ppm) emission limits,

(3) A summary of the maximum CO emission levels recorded during the performance test to show that you have met any applicable emission standard in Tables 1, 2, or 11 through 13 to this subpart, if you are not using a CO CEMS to demonstrate compliance.

(4) Identification of whether you plan to demonstrate compliance with each applicable emission limit through performance testing, a CEMS, or fuel analysis.

(5) Identification of whether you plan to demonstrate compliance by emissions averaging and identification of whether you plan to demonstrate compliance by using efficiency credits through energy conservation:

(i) If you plan to demonstrate compliance by emission averaging, report the emission level that was being achieved or the control technology employed on January 31, 2013.

(ii) [Reserved]

(6) A signed certification that you have met all applicable emission limits and work practice standards.

(7) If you had a deviation from any emission limit, work practice standard, or operating limit, you must also submit a description of the deviation, the duration of the deviation, and the corrective action taken in the Notification of Compliance Status report.

(8) In addition to the information required in § 63.9(h)(2), your notification of compliance status must include the following certification(s) of compliance, as applicable, and signed by a responsible official:

(i) “This facility complies with the required initial tune-up according to the procedures in § 63.7540(a)(10)(i) through (vi).”

(ii) “This facility has had an energy assessment performed according to § 63.7530(e).”

(iii) Except for units that burn only natural gas, refinery gas, or other gas 1 fuel, or units that qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act, include the following: “No secondary materials that are solid waste were combusted in any affected unit.”

(f) If you operate a unit designed to burn natural gas, refinery gas, or other gas 1 fuels that is subject to this subpart, and you intend to use a fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart of this part, part 60, 61, or 65, or other gas 1 fuel to fire the affected unit during a period of natural gas curtailment or supply interruption, as defined in § 63.7575, you must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption, as defined in § 63.7575. The notification must include the information specified in paragraphs (f)(1) through (5) of this section.

(1) Company name and address.

(2) Identification of the affected unit.

(3) Reason you are unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began.

(4) Type of alternative fuel that you intend to use.

(5) Dates when the alternative fuel use is expected to begin and end.

(g) If you intend to commence or recommence combustion of solid waste, you must provide 30 days prior notice of the date upon which you will commence or recommence combustion of solid waste. The notification must identify:

(1) The name of the owner or operator of the affected source, as defined in § 63.7490, the location of the source, the boiler(s) or process heater(s) that will commence burning solid waste, and the date of the notice.

(2) The currently applicable subcategories under this subpart.

(3) The date on which you became subject to the currently applicable emission limits.

(4) The date upon which you will commence combusting solid waste.

(h) If you have switched fuels or made a physical change to the boiler and the fuel switch or physical change resulted in the applicability of a different subcategory, you must provide notice of the date upon which you switched fuels or made the physical change within 30 days of the switch/change. The notification must identify:

(1) The name of the owner or operator of the affected source, as defined in § 63.7490, the location of the source, the boiler(s) and process heater(s) that have switched fuels, were physically changed, and the date of the notice.

(2) The currently applicable subcategory under this subpart.

(3) The date upon which the fuel switch or physical change occurred.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7183, Jan. 31, 2013]

§ 63.7550 What reports must I submit and when?

(a) You must submit each report in Table 9 to this subpart that applies to you.

(b) Unless the EPA Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report, according to paragraph (h) of this section, by the date in Table 9 to this subpart and according to the requirements in paragraphs (b)(1) through (4) of this section. For units that are subject only to a requirement to conduct an annual, biennial, or 5-year tune-up according to § 63.7540(a)(10), (11), or (12), respectively, and not subject to emission limits or operating limits, you may submit only an annual, biennial, or 5-year compliance report, as applicable, as specified in paragraphs (b)(1) through (4) of this section, instead of a semi-annual compliance report.

(1) The first compliance report must cover the period beginning on the compliance date that is specified for each boiler or process heater in § 63.7495 and ending on July 31 or January 31, whichever date is the first date that occurs at least 180 days (or 1, 2, or 5 years, as applicable, if submitting an annual, biennial, or 5-year compliance report) after the compliance date that is specified for your source in § 63.7495.

(2) The first compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for each boiler or process heater in § 63.7495. The first annual, biennial, or 5-year compliance report must be postmarked or submitted no later than January 31.

(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Annual, biennial, and 5-year compliance reports must cover the applicable 1-, 2-, or 5-year periods from January 1 to December 31.

(4) Each subsequent compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period. Annual, biennial, and 5-year compliance reports must be postmarked or submitted no later than January 31.

(c) A compliance report must contain the following information depending on how the facility chooses to comply with the limits set in this rule.

(1) If the facility is subject to a the requirements of a tune up they must submit a compliance report with the information in paragraphs (c)(5)(i) through (iv) and (xiv) of this section.

(2) If a facility is complying with the fuel analysis they must submit a compliance report with the information in paragraphs (c)(5)(i) through (iv), (vi), (x), (xi), (xiii), (xv) and paragraph (d) of this section.

(3) If a facility is complying with the applicable emissions limit with performance testing they must submit a compliance report with the information in (c)(5)(i) through (iv), (vi), (vii), (ix), (xi), (xiii), (xv) and paragraph (d) of this section.

(4) If a facility is complying with an emissions limit using a CMS the compliance report must contain the information required in paragraphs (c)(5)(i) through (vi), (xi), (xiii), (xv) through (xvii), and paragraph (e) of this section.

(5)(i) Company and Facility name and address.

(ii) Process unit information, emissions limitations, and operating parameter limitations.

(iii) Date of report and beginning and ending dates of the reporting period.

(iv) The total operating time during the reporting period.

(v) If you use a CMS, including CEMS, COMS, or CPMS, you must include the monitoring equipment manufacturer(s) and model numbers and the date of the last CMS certification or audit.

(vi) The total fuel use by each individual boiler or process heater subject to an emission limit within the reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by the EPA or your basis for concluding that the fuel is not a waste, and the total fuel usage amount with units of measure.

(vii) If you are conducting performance tests once every 3 years consistent with § 63.7515(b) or (c), the date of the last 2 performance tests and a statement as to whether there have been any operational changes since the last performance test that could increase emissions.

(viii) A statement indicating that you burned no new types of fuel in an individual boiler or process heater subject to an emission limit. Or, if you did burn a new type of fuel and are subject to a HCl emission limit, you must submit the calculation of chlorine input, using Equation 7 of § 63.7530, that demonstrates that your source is still within its maximum chlorine input level established during the previous performance testing (for sources that demonstrate compliance through performance testing) or you must submit the calculation of HCl emission rate using Equation 12 of § 63.7530 that demonstrates that your source is still meeting the emission limit for HCl emissions (for boilers or process heaters that demonstrate compliance through fuel analysis). If you burned a new type of fuel and are subject to a mercury emission limit, you must submit the calculation of mercury input, using Equation 8 of § 63.7530, that demonstrates that your source is still within its maximum mercury input level established during the previous performance testing (for sources that demonstrate compliance through performance testing), or you must submit the calculation of mercury emission rate using Equation 13 of § 63.7530 that demonstrates that your source is still meeting the emission limit for mercury emissions (for boilers or process heaters that demonstrate compliance through fuel analysis). If you burned a new type of fuel and are subject to a TSM emission limit, you must submit the calculation of TSM input, using Equation 9 of § 63.7530, that demonstrates that your source is still within its maximum TSM input level established during the previous performance testing (for sources that demonstrate compliance through performance testing), or you must submit the calculation of TSM emission rate, using Equation 14 of § 63.7530, that demonstrates that your source is still meeting the emission limit for TSM emissions (for boilers or process heaters that demonstrate compliance through fuel analysis).

(ix) If you wish to burn a new type of fuel in an individual boiler or process heater subject to an emission limit and you cannot demonstrate compliance with the maximum chlorine input operating limit using Equation 7 of § 63.7530 or the maximum mercury input operating limit using Equation 8 of § 63.7530, or the maximum TSM input operating limit using Equation 9 of § 63.7530 you must include in the compliance report a statement indicating the intent to conduct a new performance test within 60 days of starting to burn the new fuel.

(x) A summary of any monthly fuel analyses conducted to demonstrate compliance according to §§ 63.7521 and 63.7530 for individual boilers or process heaters subject to emission limits, and any fuel specification analyses conducted according to §§ 63.7521(f) and 63.7530(g).

(xi) If there are no deviations from any emission limits or operating limits in this subpart that apply to you, a statement that there were no deviations from the emission limits or operating limits during the reporting period.

(xii) If there were no deviations from the monitoring requirements including no periods during which the CMSs, including CEMS, COMS, and CPMS, were out of control as specified in § 63.8(c)(7), a statement that there were no deviations and no periods during which the CMS were out of control during the reporting period.

(xiii) If a malfunction occurred during the reporting period, the report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by you during a malfunction of a boiler, process heater, or associated air pollution control device or CMS to minimize emissions in accordance with § 63.7500(a)(3), including actions taken to correct the malfunction.

(xiv) Include the date of the most recent tune-up for each unit subject to only the requirement to conduct an annual, biennial, or 5-year tune-up according to § 63.7540(a)(10), (11), or (12) respectively. Include the date of the most recent burner inspection if it was not done annually, biennially, or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown.

(xv) If you plan to demonstrate compliance by emission averaging, certify the emission level achieved or the control technology employed is no less stringent than the level or control technology contained in the notification of compliance status in § 63.7545(e)(5)(i).

(xvi) For each reporting period, the compliance reports must include all of the calculated 30 day rolling average values based on the daily CEMS (CO and mercury) and CPMS (PM CPMS output, scrubber pH, scrubber liquid flow rate, scrubber pressure drop) data.

(xvii) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(d) For each deviation from an emission limit or operating limit in this subpart that occurs at an individual boiler or process heater where you are not using a CMS to comply with that emission limit or operating limit, the compliance report must additionally contain the information required in paragraphs (d)(1) through (3) of this section.

(1) A description of the deviation and which emission limit or operating limit from which you deviated.

(2) Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken.

(3) If the deviation occurred during an annual performance test, provide the date the annual performance test was completed.

(e) For each deviation from an emission limit, operating limit, and monitoring requirement in this subpart occurring at an individual boiler or process heater where you are using a CMS to comply with that emission limit or operating limit, the compliance report must additionally contain the information required in paragraphs (e)(1) through (9) of this section. This includes any deviations from your site-specific monitoring plan as required in § 63.7505(d).

(1) The date and time that each deviation started and stopped and description of the nature of the deviation (i.e., what you deviated from).

(2) The date and time that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out of control, including the information in § 63.8(c)(8).

(4) The date and time that each deviation started and stopped.

(5) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(6) A characterization of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMS's downtime during the reporting period and the total duration of CMS downtime as a percent of the total source operating time during that reporting period.

(8) A brief description of the source for which there was a deviation.

(9) A description of any changes in CMSs, processes, or controls since the last reporting period for the source for which there was a deviation.

(f)-(g) [Reserved]

(h) You must submit the reports according to the procedures specified in paragraphs (h)(1) through (3) of this section.

(1) Within 60 days after the date of completing each performance test (defined in § 63.2) as required by this subpart you must submit the results of the performance tests, including any associated fuel analyses, required by this subpart and the compliance reports required in § 63.7550(b) to the EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through the EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). Performance test data must be submitted in the file format generated through use of the EPA's Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/index.html*). Only data collected using test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to the EPA via CDX as described earlier in this paragraph. At the discretion of the Administrator, you must also submit these reports, including the confidential business information, to the Administrator in the format specified by the Administrator. For

any performance test conducted using test methods that are not listed on the ERT Web site, the owner or operator shall submit the results of the performance test in paper submissions to the Administrator.

(2) Within 60 days after the date of completing each CEMS performance evaluation test (defined in 63.2) you must submit the relative accuracy test audit (RATA) data to the EPA's Central Data Exchange by using CEDRI as mentioned in paragraph (h)(1) of this section. Only RATA pollutants that can be documented with the ERT (as listed on the ERT Web site) are subject to this requirement. For any performance evaluations with no corresponding RATA pollutants listed on the ERT Web site, the owner or operator shall submit the results of the performance evaluation in paper submissions to the Administrator.

(3) You must submit all reports required by Table 9 of this subpart electronically using CEDRI that is accessed through the EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due the report you must submit the report to the Administrator at the appropriate address listed in § 63.13. At the discretion of the Administrator, you must also submit these reports, to the Administrator in the format specified by the Administrator.

[78 FR 7183, Jan. 31, 2013]

§ 63.7555 What records must I keep?

(a) You must keep records according to paragraphs (a)(1) and (2) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that you submitted, according to the requirements in § 63.10(b)(2)(xiv).

(2) Records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in § 63.10(b)(2)(viii).

(b) For each CEMS, COMS, and continuous monitoring system you must keep records according to paragraphs (b)(1) through (5) of this section.

(1) Records described in § 63.10(b)(2)(vii) through (xi).

(2) Monitoring data for continuous opacity monitoring system during a performance evaluation as required in § 63.6(h)(7)(i) and (ii).

(3) Previous (*i.e.,* superseded) versions of the performance evaluation plan as required in § 63.8(d)(3).

(4) Request for alternatives to relative accuracy test for CEMS as required in § 63.8(f)(6)(i).

(5) Records of the date and time that each deviation started and stopped.

(c) You must keep the records required in Table 8 to this subpart including records of all monitoring data and calculated averages for applicable operating limits, such as opacity, pressure drop, pH, and operating load, to show continuous compliance with each emission limit and operating limit that applies to you.

(d) For each boiler or process heater subject to an emission limit in Tables 1, 2, or 11 through 13 to this subpart, you must also keep the applicable records in paragraphs (d)(1) through (11) of this section.

(1) You must keep records of monthly fuel use by each boiler or process heater, including the type(s) of fuel and amount(s) used.

(2) If you combust non-hazardous secondary materials that have been determined not to be solid waste pursuant to § 241.3(b)(1) and (2) of this chapter, you must keep a record that documents how the secondary material meets each of the legitimacy criteria under § 241.3(d)(1) of this chapter. If you combust a fuel that has been processed from a discarded non-hazardous secondary material pursuant to § 241.3(b)(4) of this chapter, you must keep records as to how the operations that produced the fuel satisfy the definition of processing in § 241.2 of this chapter. If the fuel received a non-waste determination pursuant to the petition process submitted under § 241.3(c) of this chapter, you must keep a record that documents how the fuel satisfies the requirements of the petition process. For operating units that combust non-hazardous secondary materials as fuel per § 241.4 of this chapter, you must keep records documenting that the material is listed as a non-waste under § 241.4(a) of this chapter. Units exempt from the incinerator standards under section 129(g)(1) of the Clean Air Act because they are qualifying facilities burning a homogeneous waste stream do not need to maintain the records described in this paragraph (d)(2).

(3) For units in the limited use subcategory, you must keep a copy of the federally enforceable permit that limits the annual capacity factor to less than or equal to 10 percent and fuel use records for the days the boiler or process heater was operating.

(4) A copy of all calculations and supporting documentation of maximum chlorine fuel input, using Equation 7 of § 63.7530, that were done to demonstrate continuous compliance with the HCl emission limit, for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of HCl emission rates, using Equation 12 of § 63.7530, that were done to demonstrate compliance with the HCl emission limit. Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum chlorine fuel input or HCl emission rates. You can use the results from one fuel analysis for multiple boilers and process heaters provided they are all burning the same fuel type. However, you must calculate chlorine fuel input, or HCl emission rate, for each boiler and process heater.

(5) A copy of all calculations and supporting documentation of maximum mercury fuel input, using Equation 8 of § 63.7530, that were done to demonstrate continuous compliance with the mercury emission limit for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of mercury emission rates, using Equation 13 of § 63.7530, that were done to demonstrate compliance with the mercury emission limit. Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum mercury fuel input or mercury emission rates. You can use the results from one fuel analysis for multiple boilers and process heaters provided they are all burning the same fuel type. However, you must calculate mercury fuel input, or mercury emission rates, for each boiler and process heater.

(6) If, consistent with § 63.7515(b), you choose to stack test less frequently than annually, you must keep a record that documents that your emissions in the previous stack test(s) were less than 75 percent of the applicable emission limit (or, in specific instances noted in Tables 1 and 2 or 11 through 13 to this subpart, less than the applicable emission limit), and document that there was no change in source operations including fuel composition and operation of air pollution control equipment that would cause emissions of the relevant pollutant to increase within the past year.

(7) Records of the occurrence and duration of each malfunction of the boiler or process heater, or of the associated air pollution control and monitoring equipment.

(8) Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in § 63.7500(a)(3), including corrective actions to restore the

malfunctioning boiler or process heater, air pollution control, or monitoring equipment to its normal or usual manner of operation.

(9) A copy of all calculations and supporting documentation of maximum TSM fuel input, using Equation 9 of § 63.7530, that were done to demonstrate continuous compliance with the TSM emission limit for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of TSM emission rates, using Equation 14 of § 63.7530, that were done to demonstrate compliance with the TSM emission limit. Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum TSM fuel input or TSM emission rates. You can use the results from one fuel analysis for multiple boilers and process heaters provided they are all burning the same fuel type. However, you must calculate TSM fuel input, or TSM emission rates, for each boiler and process heater.

(10) You must maintain records of the calendar date, time, occurrence and duration of each startup and shutdown.

(11) You must maintain records of the type(s) and amount(s) of fuels used during each startup and shutdown.

(e) If you elect to average emissions consistent with § 63.7522, you must additionally keep a copy of the emission averaging implementation plan required in § 63.7522(g), all calculations required under § 63.7522, including monthly records of heat input or steam generation, as applicable, and monitoring records consistent with § 63.7541.

(f) If you elect to use efficiency credits from energy conservation measures to demonstrate compliance according to § 63.7533, you must keep a copy of the Implementation Plan required in § 63.7533(d) and copies of all data and calculations used to establish credits according to § 63.7533(b), (c), and (f).

(g) If you elected to demonstrate that the unit meets the specification for mercury for the unit designed to burn gas 1 subcategory, you must maintain monthly records (or at the frequency required by § 63.7540(c)) of the calculations and results of the fuel specification for mercury in Table 6.

(h) If you operate a unit in the unit designed to burn gas 1 subcategory that is subject to this subpart, and you use an alternative fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart under this part, other gas 1 fuel, or gaseous fuel subject to another subpart of this part or part 60, 61, or 65, you must keep records of the total hours per calendar year that alternative fuel is burned and the total hours per calendar year that the unit operated during periods of gas curtailment or gas supply emergencies.

(i) You must maintain records of the calendar date, time, occurrence and duration of each startup and shutdown.

(j) You must maintain records of the type(s) and amount(s) of fuels used during each startup and shutdown.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7185, Jan. 31, 2013]

§ 63.7560 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review, according to § 63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record on site, or they must be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1). You can keep the records off site for the remaining 3 years.

Other Requirements and Information

§ 63.7565 What parts of the General Provisions apply to me?

Table 10 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you.

§ 63.7570 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by the EPA, or an Administrator such as your state, local, or tribal agency. If the EPA Administrator has delegated authority to your state, local, or tribal agency, then that agency (as well as the EPA) has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if this subpart is delegated to your state, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a state, local, or tribal agency under 40 CFR part 63, subpart E, the authorities listed in paragraphs (b)(1) through (5) of this section are retained by the EPA Administrator and are not transferred to the state, local, or tribal agency, however, the EPA retains oversight of this subpart and can take enforcement actions, as appropriate.

(1) Approval of alternatives to the non-opacity emission limits and work practice standards in § 63.7500(a) and (b) under § 63.6(g).

(2) Approval of alternative opacity emission limits in § 63.7500(a) under § 63.6(h)(9).

(3) Approval of major change to test methods in Table 5 to this subpart under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90, and alternative analytical methods requested under § 63.7521(b)(2).

(4) Approval of major change to monitoring under § 63.8(f) and as defined in § 63.90, and approval of alternative operating parameters under § 63.7500(a)(2) and § 63.7522(g)(2).

(5) Approval of major change to recordkeeping and reporting under § 63.10(e) and as defined in § 63.90.

[76 FR 15664, Mar. 21, 2011 as amended at 78 FR 7186, Jan. 31, 2013]

§ 63.7575 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act, in § 63.2 (the General Provisions), and in this section as follows:

10-day rolling average means the arithmetic mean of the previous 240 hours of valid operating data. Valid data excludes hours during startup and shutdown, data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities, and periods when this unit is not operating. The 240 hours should be consecutive, but not necessarily continuous if operations were intermittent.

30-day rolling average means the arithmetic mean of the previous 720 hours of valid operating data. Valid data excludes hours during startup and shutdown, data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities, and periods when this unit is not operating. The 720 hours should be consecutive, but not necessarily continuous if operations were intermittent.

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

Annual capacity factor means the ratio between the actual heat input to a boiler or process heater from the fuels burned during a calendar year and the potential heat input to the boiler or process heater had it been operated for 8,760 hours during a year at the maximum steady state design heat input capacity.

Annual heat input means the heat input for the 12 months preceding the compliance demonstration.

Average annual heat input rate means total heat input divided by the hours of operation for the 12 months preceding the compliance demonstration.

Bag leak detection system means a group of instruments that are capable of monitoring particulate matter loadings in the exhaust of a fabric filter (*i.e.,* baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on electrodynamic, triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings.

Benchmark means the fuel heat input for a boiler or process heater for the one-year period before the date that an energy demand reduction occurs, unless it can be demonstrated that a different time period is more representative of historical operations.

Biodiesel means a mono-alkyl ester derived from biomass and conforming to ASTM D6751-11b, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels (incorporated by reference, see § 63.14).

Biomass or bio-based solid fuel means any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue; wood products (*e.g.,* trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings); animal manure, including litter and other bedding materials; vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (*e.g.,* almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds. This definition of biomass is not intended to suggest that these materials are or are not solid waste.

Blast furnace gas fuel-fired boiler or process heater means an industrial/commercial/institutional boiler or process heater that receives 90 percent or more of its total annual gas volume from blast furnace gas.

Boiler means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. Controlled flame combustion refers to a steady-state, or near steady-state, process wherein fuel and/or oxidizer feed rates are controlled. A device combusting solid waste, as defined in § 241.3 of this chapter, is not a boiler unless the device is exempt from the definition of a solid waste incineration unit as provided in section 129(g)(1) of the Clean Air Act. Waste heat boilers are excluded from this definition.

Boiler system means the boiler and associated components, such as, the feed water system, the combustion air system, the fuel system (including burners), blowdown system, combustion control systems, steam systems, and condensate return systems.

Calendar year means the period between January 1 and December 31, inclusive, for a given year.

Coal means all solid fuels classifiable as anthracite, bituminous, sub-bituminous, or lignite by ASTM D388 (incorporated by reference, see § 63.14), coal refuse, and petroleum coke. For the purposes of this subpart, this definition of “coal” includes synthetic fuels derived from coal, including but not limited to, solvent-refined coal, coal-oil mixtures, and coal-water mixtures. Coal derived gases are excluded from this definition.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (6,000 Btu per pound) on a dry basis.

Commercial/institutional boiler means a boiler used in commercial establishments or institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, elementary and secondary schools, libraries, religious establishments, governmental buildings, hotels, restaurants, and laundries to provide electricity, steam, and/or hot water.

Common stack means the exhaust of emissions from two or more affected units through a single flue. Affected units with a common stack may each have separate air pollution control systems located before the common stack, or may have a single air pollution control system located after the exhausts come together in a single flue.

Cost-effective energy conservation measure means a measure that is implemented to improve the energy efficiency of the boiler or facility that has a payback (return of investment) period of 2 years or less.

Daily block average means the arithmetic mean of all valid emission concentrations or parameter levels recorded when a unit is operating measured over the 24-hour period from 12 a.m. (midnight) to 12 a.m. (midnight), except for periods of startup and shutdown or downtime.

Deviation. (1) *Deviation* means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(i) Fails to meet any applicable requirement or obligation established by this subpart including, but not limited to, any emission limit, operating limit, or work practice standard; or

(ii) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit.

(2) A deviation is not always a violation.

Dioxins/furans means tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans.

Distillate oil means fuel oils that contain 0.05 weight percent nitrogen or less and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see § 63.14) or diesel fuel oil numbers 1 and 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see § 63.14), kerosene, and biodiesel as defined by the American Society of Testing and Materials in ASTM D6751-11b (incorporated by reference, see § 60.14).

Dry scrubber means an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gas in the exhaust stream forming a dry powder material. Sorbent injection systems used as control devices in fluidized bed boilers and process heaters are included in this definition. A dry scrubber is a dry control system.

Dutch oven means a unit having a refractory-walled cell connected to a conventional boiler setting. Fuel materials are introduced through an opening in the roof of the dutch oven and burn in a pile on its floor. Fluidized bed boilers are not part of the dutch oven design category.

Efficiency credit means emission reductions above those required by this subpart. Efficiency credits generated may be used to comply with the emissions limits. Credits may come from pollution prevention projects that result in reduced fuel use by affected units. Boilers that are shut down cannot be used to generate credits unless the facility provides documentation linking the permanent shutdown to implementation of the energy conservation measures identified in the energy assessment.

Electric utility steam generating unit (EGU) means a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit. To be “capable of combusting” fossil fuels, an EGU would need to have these fuels allowed in their operating permits and have the appropriate fuel handling facilities on-site or otherwise available (e.g., coal handling equipment, including coal storage area, belts and conveyers, pulverizers, etc.; oil storage facilities). In addition, fossil fuel-fired EGU means any EGU that fired fossil fuel for more than 10.0 percent of the average annual heat input in any 3 consecutive calendar years or for more than 15.0 percent of the annual heat input during any one calendar year after April 16, 2012.

Electrostatic precipitator (ESP) means an add-on air pollution control device used to capture particulate matter by charging the particles using an electrostatic field, collecting the particles using a grounded collecting surface, and transporting the particles into a hopper. An electrostatic precipitator is usually a dry control system.

Energy assessment means the following for the emission units covered by this subpart:

(1) The energy assessment for facilities with affected boilers and process heaters with a combined heat input capacity of less than 0.3 trillion Btu (TBtu) per year will be 8 on-site technical labor hours in length maximum, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s) and any on-site energy use system(s) accounting for at least 50 percent of the affected boiler(s) energy (e.g., steam, hot water, process heat, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities, within the limit of performing an 8-hour on-site energy assessment.

(2) The energy assessment for facilities with affected boilers and process heaters with a combined heat input capacity of 0.3 to 1.0 TBtu/year will be 24 on-site technical labor hours in length maximum, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s) and any on-site energy use system(s) accounting for at least 33 percent of the energy (e.g., steam, hot water,

process heat, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities, within the limit of performing a 24-hour on-site energy assessment.

(3) The energy assessment for facilities with affected boilers and process heaters with a combined heat input capacity greater than 1.0 TBtu/year will be up to 24 on-site technical labor hours in length for the first TBtu/yr plus 8 on-site technical labor hours for every additional 1.0 TBtu/yr not to exceed 160 on-site technical hours, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s), process heater(s), and any on-site energy use system(s) accounting for at least 20 percent of the energy (e.g., steam, process heat, hot water, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities.

(4) The on-site energy use systems serving as the basis for the percent of affected boiler(s) and process heater(s) energy production in paragraphs (1), (2), and (3) of this definition may be segmented by production area or energy use area as most logical and applicable to the specific facility being assessed (e.g., product X manufacturing area; product Y drying area; Building Z).

Energy management practices means the set of practices and procedures designed to manage energy use that are demonstrated by the facility's energy policies, a facility energy manager and other staffing responsibilities, energy performance measurement and tracking methods, an energy saving goal, action plans, operating procedures, internal reporting requirements, and periodic review intervals used at the facility.

Energy management program means a program that includes a set of practices and procedures designed to manage energy use that are demonstrated by the facility's energy policies, a facility energy manager and other staffing responsibilities, energy performance measurement and tracking methods, an energy saving goal, action plans, operating procedures, internal reporting requirements, and periodic review intervals used at the facility. Facilities may establish their program through energy management systems compatible with ISO 50001.

Energy use system includes the following systems located on-site that use energy (steam, hot water, or electricity) provided by the affected boiler or process heater: process heating; compressed air systems; machine drive (motors, pumps, fans); process cooling; facility heating, ventilation, and air-conditioning systems; hot water systems; building envelop; and lighting; or other systems that use steam, hot water, process heat, or electricity provided by the affected boiler or process heater. Energy use systems are only those systems using energy clearly produced by affected boilers and process heaters.

Equivalent means the following only as this term is used in Table 6 to this subpart:

(1) An equivalent sample collection procedure means a published voluntary consensus standard or practice (VCS) or EPA method that includes collection of a minimum of three composite fuel samples, with each composite consisting of a minimum of three increments collected at approximately equal intervals over the test period.

(2) An equivalent sample compositing procedure means a published VCS or EPA method to systematically mix and obtain a representative subsample (part) of the composite sample.

(3) An equivalent sample preparation procedure means a published VCS or EPA method that: Clearly states that the standard, practice or method is appropriate for the pollutant and the fuel matrix; or is cited as an appropriate sample preparation standard, practice or method for the pollutant in the chosen VCS or EPA determinative or analytical method.

(4) An equivalent procedure for determining heat content means a published VCS or EPA method to obtain gross calorific (or higher heating) value.

(5) An equivalent procedure for determining fuel moisture content means a published VCS or EPA method to obtain moisture content. If the sample analysis plan calls for determining metals (especially the mercury, selenium, or arsenic) using an aliquot of the dried sample, then the drying temperature must be modified to prevent vaporizing these metals. On the other hand, if metals analysis is done on an “as received” basis, a separate aliquot can be dried to determine moisture content and the metals concentration mathematically adjusted to a dry basis.

(6) An equivalent pollutant (mercury, HCl) determinative or analytical procedure means a published VCS or EPA method that clearly states that the standard, practice, or method is appropriate for the pollutant and the fuel matrix and has a published detection limit equal or lower than the methods listed in Table 6 to this subpart for the same purpose.

Fabric filter means an add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media, also known as a baghouse. A fabric filter is a dry control system.

Federally enforceable means all limitations and conditions that are enforceable by the EPA Administrator, including, but not limited to, the requirements of 40 CFR parts 60, 61, 63, and 65, requirements within any applicable state implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

Fluidized bed boiler means a boiler utilizing a fluidized bed combustion process that is not a pulverized coal boiler.

Fluidized bed boiler with an integrated fluidized bed heat exchanger means a boiler utilizing a fluidized bed combustion where the entire tube surface area is located outside of the furnace section at the exit of the cyclone section and exposed to the flue gas stream for conductive heat transfer. This design applies only to boilers in the unit designed to burn coal/solid fossil fuel subcategory that fire coal refuse.

Fluidized bed combustion means a process where a fuel is burned in a bed of granulated particles, which are maintained in a mobile suspension by the forward flow of air and combustion products.

Fuel cell means a boiler type in which the fuel is dropped onto suspended fixed grates and is fired in a pile. The refractory-lined fuel cell uses combustion air preheating and positioning of secondary and tertiary air injection ports to improve boiler efficiency. Fluidized bed, dutch oven, pile burner, hybrid suspension grate, and suspension burners are not part of the fuel cell subcategory.

Fuel type means each category of fuels that share a common name or classification. Examples include, but are not limited to, bituminous coal, sub-bituminous coal, lignite, anthracite, biomass, distillate oil, residual oil. Individual fuel types received from different suppliers are not considered new fuel types.

Gaseous fuel includes, but is not limited to, natural gas, process gas, landfill gas, coal derived gas, refinery gas, and biogas. Blast furnace gas and process gases that are regulated under another subpart of this part, or part 60, part 61, or part 65 of this chapter, are exempted from this definition.

Heat input means heat derived from combustion of fuel in a boiler or process heater and does not include the heat input from preheated combustion air, recirculated flue gases, returned condensate, or exhaust gases from other sources such as gas turbines, internal combustion engines, kilns, etc.

Heavy liquid includes residual oil and any other liquid fuel not classified as a light liquid.

Hourly average means the arithmetic average of at least four CMS data values representing the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed.

Hot water heater means a closed vessel with a capacity of no more than 120 U.S. gallons in which water is heated by combustion of gaseous, liquid, or biomass/bio-based solid fuel and is withdrawn for use external to the vessel. Hot water boilers (i.e., not generating steam) combusting gaseous, liquid, or biomass fuel with a heat input capacity of less than 1.6 million Btu per hour are included in this definition. The 120 U.S. gallon capacity threshold to be considered a hot water heater is independent of the 1.6 MMBtu/hr heat input capacity threshold for hot water boilers. Hot water heater also means a tankless unit that provides on demand hot water.

Hybrid suspension grate boiler means a boiler designed with air distributors to spread the fuel material over the entire width and depth of the boiler combustion zone. The biomass fuel combusted in these units exceeds a moisture content of 40 percent on an as-fired annual heat input basis. The drying and much of the combustion of the fuel takes place in suspension, and the combustion is completed on the grate or floor of the boiler. Fluidized bed, dutch oven, and pile burner designs are not part of the hybrid suspension grate boiler design category.

Industrial boiler means a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity.

Light liquid includes distillate oil, biodiesel, or vegetable oil.

Limited-use boiler or process heater means any boiler or process heater that burns any amount of solid, liquid, or gaseous fuels and has a federally enforceable average annual capacity factor of no more than 10 percent.

Liquid fuel includes, but is not limited to, light liquid, heavy liquid, any form of liquid fuel derived from petroleum, used oil, liquid biofuels, biodiesel, vegetable oil, and comparable fuels as defined under 40 CFR 261.38.

Load fraction means the actual heat input of a boiler or process heater divided by heat input during the performance test that established the minimum sorbent injection rate or minimum activated carbon injection rate, expressed as a fraction (e.g., for 50 percent load the load fraction is 0.5).

Major source for oil and natural gas production facilities, as used in this subpart, shall have the same meaning as in § 63.2, except that:

(1) Emissions from any oil or gas exploration or production well (with its associated equipment, as defined in this section), and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;

(2) Emissions from processes, operations, or equipment that are not part of the same facility, as defined in this section, shall not be aggregated; and

(3) For facilities that are production field facilities, only HAP emissions from glycol dehydration units and storage vessels with the potential for flash emissions shall be aggregated for a major source determination. For facilities that are not production field facilities, HAP emissions from all HAP emission units shall be aggregated for a major source determination.

Metal process furnaces are a subcategory of process heaters, as defined in this subpart, which include natural gas-fired annealing furnaces, preheat furnaces, reheat furnaces, aging furnaces, heat treat furnaces, and homogenizing furnaces.

Million Btu (MMBtu) means one million British thermal units.

Minimum activated carbon injection rate means load fraction multiplied by the lowest hourly average activated carbon injection rate measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.

Minimum oxygen level means the lowest hourly average oxygen level measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.

Minimum pressure drop means the lowest hourly average pressure drop measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.

Minimum scrubber effluent pH means the lowest hourly average sorbent liquid pH measured at the inlet to the wet scrubber according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable hydrogen chloride emission limit.

Minimum scrubber liquid flow rate means the lowest hourly average liquid flow rate (e.g., to the PM scrubber or to the acid gas scrubber) measured according to Table 7 to this subpart during the most recent performance stack test demonstrating compliance with the applicable emission limit.

Minimum scrubber pressure drop means the lowest hourly average scrubber pressure drop measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.

Minimum sorbent injection rate means:

(1) The load fraction multiplied by the lowest hourly average sorbent injection rate for each sorbent measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limits; or

(2) For fluidized bed combustion, the lowest average ratio of sorbent to sulfur measured during the most recent performance test.

Minimum total secondary electric power means the lowest hourly average total secondary electric power determined from the values of secondary voltage and secondary current to the electrostatic precipitator measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limits.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

(2) Liquefied petroleum gas, as defined in ASTM D1835 (incorporated by reference, see § 63.14); or

(3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value

between 35 and 41 megajoules (MJ) per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot); or

(4) Propane or propane derived synthetic natural gas. Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure $C_3 H_8$.

Opacity means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

Operating day means a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the boiler or process heater unit. It is not necessary for fuel to be combusted for the entire 24-hour period.

Other combustor means a unit designed to burn solid fuel that is not classified as a dutch oven, fluidized bed, fuel cell, hybrid suspension grate boiler, pulverized coal boiler, stoker, sloped grate, or suspension boiler as defined in this subpart.

Other gas 1 fuel means a gaseous fuel that is not natural gas or refinery gas and does not exceed a maximum concentration of 40 micrograms/cubic meters of mercury.

Oxygen analyzer system means all equipment required to determine the oxygen content of a gas stream and used to monitor oxygen in the boiler or process heater flue gas, boiler or process heater, firebox, or other appropriate location. This definition includes oxygen trim systems. The source owner or operator must install, calibrate, maintain, and operate the oxygen analyzer system in accordance with the manufacturer's recommendations.

Oxygen trim system means a system of monitors that is used to maintain excess air at the desired level in a combustion device. A typical system consists of a flue gas oxygen and/or CO monitor that automatically provides a feedback signal to the combustion air controller.

Particulate matter (PM) means any finely divided solid or liquid material, other than uncombined water, as measured by the test methods specified under this subpart, or an approved alternative method.

Period of gas curtailment or supply interruption means a period of time during which the supply of gaseous fuel to an affected boiler or process heater is restricted or halted for reasons beyond the control of the facility. The act of entering into a contractual agreement with a supplier of natural gas established for curtailment purposes does not constitute a reason that is under the control of a facility for the purposes of this definition. An increase in the cost or unit price of natural gas due to normal market fluctuations not during periods of supplier delivery restriction does not constitute a period of natural gas curtailment or supply interruption. On-site gaseous fuel system emergencies or equipment failures qualify as periods of supply interruption when the emergency or failure is beyond the control of the facility.

Pile burner means a boiler design incorporating a design where the anticipated biomass fuel has a high relative moisture content. Grates serve to support the fuel, and underfire air flowing up through the grates provides oxygen for combustion, cools the grates, promotes turbulence in the fuel bed, and fires the fuel. The most common form of pile burning is the dutch oven.

Process heater means an enclosed device using controlled flame, and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material (e.g., glycol or a mixture of glycol and water) for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not come into direct contact with process materials. A device combusting solid waste, as defined in § 241.3 of this chapter, is not a process heater unless the device is exempt from the definition of a solid waste incineration unit as provided in section

129(g)(1) of the Clean Air Act. Process heaters do not include units used for comfort heat or space heat, food preparation for on-site consumption, or autoclaves. Waste heat process heaters are excluded from this definition.

Pulverized coal boiler means a boiler in which pulverized coal or other solid fossil fuel is introduced into an air stream that carries the coal to the combustion chamber of the boiler where it is fired in suspension.

Qualified energy assessor means:

(1) Someone who has demonstrated capabilities to evaluate energy savings opportunities for steam generation and major energy using systems, including, but not limited to:

(i) Boiler combustion management.

(ii) Boiler thermal energy recovery, including

(A) Conventional feed water economizer,

(B) Conventional combustion air preheater, and

(C) Condensing economizer.

(iii) Boiler blowdown thermal energy recovery.

(iv) Primary energy resource selection, including

(A) Fuel (primary energy source) switching, and

(B) Applied steam energy versus direct-fired energy versus electricity.

(v) Insulation issues.

(vi) Steam trap and steam leak management.

(vi) Condensate recovery.

(viii) Steam end-use management.

(2) Capabilities and knowledge includes, but is not limited to:

(i) Background, experience, and recognized abilities to perform the assessment activities, data analysis, and report preparation.

(ii) Familiarity with operating and maintenance practices for steam or process heating systems.

(iii) Additional potential steam system improvement opportunities including improving steam turbine operations and reducing steam demand.

(iv) Additional process heating system opportunities including effective utilization of waste heat and use of proper process heating methods.

(v) Boiler-steam turbine cogeneration systems.

(vi) Industry specific steam end-use systems.

Refinery gas means any gas that is generated at a petroleum refinery and is combusted. Refinery gas includes natural gas when the natural gas is combined and combusted in any proportion with a gas generated at a refinery. Refinery gas includes gases generated from other facilities when that gas is combined and combusted in any proportion with gas generated at a refinery.

Regulated gas stream means an offgas stream that is routed to a boiler or process heater for the purpose of achieving compliance with a standard under another subpart of this part or part 60, part 61, or part 65 of this chapter.

Residential boiler means a boiler used to provide heat and/or hot water and/or as part of a residential combined heat and power system. This definition includes boilers located at an institutional facility (e.g., university campus, military base, church grounds) or commercial/industrial facility (e.g., farm) used primarily to provide heat and/or hot water for:

(1) A dwelling containing four or fewer families; or

(2) A single unit residence dwelling that has since been converted or subdivided into condominiums or apartments.

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society of Testing and Materials in ASTM D396-10 (incorporated by reference, *see* § 63.14(b)).

Responsible official means responsible official as defined in § 70.2.

Secondary material means the material as defined in § 241.2 of this chapter.

Shutdown means the cessation of operation of a boiler or process heater for any purpose. Shutdown begins either when none of the steam from the boiler is supplied for heating and/or producing electricity, or for any other purpose, or at the point of no fuel being fired in the boiler or process heater, whichever is earlier. Shutdown ends when there is no steam and no heat being supplied and no fuel being fired in the boiler or process heater.

Sloped grate means a unit where the solid fuel is fed to the top of the grate from where it slides downwards; while sliding the fuel first dries and then ignites and burns. The ash is deposited at the bottom of the grate. Fluidized bed, dutch oven, pile burner, hybrid suspension grate, suspension burners, and fuel cells are not considered to be a sloped grate design.

Solid fossil fuel includes, but is not limited to, coal, coke, petroleum coke, and tire derived fuel.

Solid fuel means any solid fossil fuel or biomass or bio-based solid fuel.

Startup means either the first-ever firing of fuel in a boiler or process heater for the purpose of supplying steam or heat for heating and/or producing electricity, or for any other purpose, or the firing of fuel in a boiler after a shutdown event for any purpose. Startup ends when any of the steam or heat from the boiler or process heater is supplied for heating, and/or producing electricity, or for any other purpose.

Steam output means:

(1) For a boiler that produces steam for process or heating only (no power generation), the energy content in terms of MMBtu of the boiler steam output,

(2) For a boiler that cogenerates process steam and electricity (also known as combined heat and power), the total energy output, which is the sum of the energy content of the steam exiting the turbine and sent to process in MMBtu and the energy of the electricity generated converted to MMBtu at a rate of 10,000 Btu per kilowatt-hour generated (10 MMBtu per megawatt-hour), and

(3) For a boiler that generates only electricity, the alternate output-based emission limits would be calculated using Equations 21 through 25 of this section, as appropriate:

(i) For emission limits for boilers in the unit designed to burn solid fuel subcategory use Equation 21 of this section:

$$EL_{OBE} = EL_T \times 12.7 \text{ MMBtu/Mwh} \quad \text{(Eq. 21)}$$

Where:

EL_{OBE} = Emission limit in units of pounds per megawatt-hour.

EL_T = Appropriate emission limit from Table 1 or 2 of this subpart in units of pounds per million Btu heat input.

(ii) For PM and CO emission limits for boilers in one of the subcategories of units designed to burn coal use Equation 22 of this section:

$$EL_{OBE} = EL_T \times 12.2 \text{ MMBtu/Mwh} \quad \text{(Eq. 22)}$$

Where:

EL_{OBE} = Emission limit in units of pounds per megawatt-hour.

EL_T = Appropriate emission limit from Table 1 or 2 of this subpart in units of pounds per million Btu heat input.

(iii) For PM and CO emission limits for boilers in one of the subcategories of units designed to burn biomass use Equation 23 of this section:

$$EL_{OBE} = EL_T \times 13.9 \text{ MMBtu/Mwh} \quad \text{(Eq. 23)}$$

Where:

EL_{OBE} = Emission limit in units of pounds per megawatt-hour.

EL_T = Appropriate emission limit from Table 1 or 2 of this subpart in units of pounds per million Btu heat input.

(iv) For emission limits for boilers in one of the subcategories of units designed to burn liquid fuels use Equation 24 of this section:

$$EL_{OBE} = EL_T \times 13.8 \text{ MMBtu/Mwh} \quad \text{(Eq. 24)}$$

Where:

EL_{OBE} = Emission limit in units of pounds per megawatt-hour.

EL_T = Appropriate emission limit from Table 1 or 2 of this subpart in units of pounds per million Btu heat input.

(v) For emission limits for boilers in the unit designed to burn gas 2 (other) subcategory, use Equation 25 of this section:

$$EL_{OBE} = EL_T \times 10.4 \text{ MMBtu/Mwh} \quad \text{(Eq. 25)}$$

Where:

EL_{OBE} = Emission limit in units of pounds per megawatt-hour.

EL_T = Appropriate emission limit from Table 1 or 2 of this subpart in units of pounds per million Btu heat input.

Stoker means a unit consisting of a mechanically operated fuel feeding mechanism, a stationary or moving grate to support the burning of fuel and admit under-grate air to the fuel, an overfire air system to complete combustion, and an ash discharge system. This definition of stoker includes air swept stokers. There are two general types of stokers: Underfeed and overfeed. Overfeed stokers include mass feed and spreader stokers. Fluidized bed, dutch oven, pile burner, hybrid suspension grate, suspension burners, and fuel cells are not considered to be a stoker design.

Stoker/sloped grate/other unit designed to burn kiln dried biomass means the unit is in the units designed to burn biomass/bio-based solid subcategory that is either a stoker, sloped grate, or other combustor design and is not in the stoker/sloped grate/other units designed to burn wet biomass subcategory.

Stoker/sloped grate/other unit designed to burn wet biomass means the unit is in the units designed to burn biomass/bio-based solid subcategory that is either a stoker, sloped grate, or other combustor design and any of the biomass/bio-based solid fuel combusted in the unit exceeds 20 percent moisture on an annual heat input basis.

Suspension burner means a unit designed to fire dry biomass/biobased solid particles in suspension that are conveyed in an airstream to the furnace like pulverized coal. The combustion of the fuel material is completed on a grate or floor below. The biomass/biobased fuel combusted in the unit shall not exceed 20 percent moisture on an annual heat input basis. Fluidized bed, dutch oven, pile burner, and hybrid suspension grate units are not part of the suspension burner subcategory.

Temporary boiler means any gaseous or liquid fuel boiler that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A boiler is not a temporary boiler if any one of the following conditions exists:

(1) The equipment is attached to a foundation.

(2) The boiler or a replacement remains at a location within the facility and performs the same or similar function for more than 12 consecutive months, unless the regulatory agency approves an extension. An extension may be granted by the regulating agency upon petition by the owner or operator of a unit specifying the basis for such a request. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.

(3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.

(4) The equipment is moved from one location to another within the facility but continues to perform the same or similar function and serve the same electricity, steam, and/or hot water system in an attempt to circumvent the residence time requirements of this definition.

Total selected metals (TSM) means the sum of the following metallic hazardous air pollutants: arsenic, beryllium, cadmium, chromium, lead, manganese, nickel and selenium.

Traditional fuel means the fuel as defined in § 241.2 of this chapter.

Tune-up means adjustments made to a boiler or process heater in accordance with the procedures outlined in § 63.7540(a)(10).

Ultra low sulfur liquid fuel means a distillate oil that has less than or equal to 15 ppm sulfur.

Unit designed to burn biomass/bio-based solid subcategory includes any boiler or process heater that burns at least 10 percent biomass or bio-based solids on an annual heat input basis in combination with solid fossil fuels, liquid fuels, or gaseous fuels.

Unit designed to burn coal/solid fossil fuel subcategory includes any boiler or process heater that burns any coal or other solid fossil fuel alone or at least 10 percent coal or other solid fossil fuel on an annual heat input basis in combination with liquid fuels, gaseous fuels, or less than 10 percent biomass and bio-based solids on an annual heat input basis.

Unit designed to burn gas 1 subcategory includes any boiler or process heater that burns only natural gas, refinery gas, and/or other gas 1 fuels. Gaseous fuel boilers and process heaters that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year, are included in this definition. Gaseous fuel boilers and process heaters that burn liquid fuel during periods of gas curtailment or gas supply interruptions of any duration are also included in this definition.

Unit designed to burn gas 2 (other) subcategory includes any boiler or process heater that is not in the unit designed to burn gas 1 subcategory and burns any gaseous fuels either alone or in combination with less than 10 percent coal/solid fossil fuel, and less than 10 percent biomass/bio-based solid fuel on an annual heat input basis, and no liquid fuels. Gaseous fuel boilers and process heaters that are not in the unit designed to burn gas 1 subcategory and that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year, are included in this definition. Gaseous fuel boilers and process heaters that are not in the unit designed to burn gas 1 subcategory and that burn liquid fuel during periods of gas curtailment or gas supply interruption of any duration are also included in this definition.

Unit designed to burn heavy liquid subcategory means a unit in the unit designed to burn liquid subcategory where at least 10 percent of the heat input from liquid fuels on an annual heat input basis comes from heavy liquids.

Unit designed to burn light liquid subcategory means a unit in the unit designed to burn liquid subcategory that is not part of the unit designed to burn heavy liquid subcategory.

Unit designed to burn liquid subcategory includes any boiler or process heater that burns any liquid fuel, but less than 10 percent coal/solid fossil fuel and less than 10 percent biomass/bio-based solid fuel on an annual heat input basis, either alone or in combination with gaseous fuels. Units in the unit design to burn gas 1 or unit designed to burn gas 2 (other) subcategories that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year are not included in this definition. Units in the unit design to burn gas 1 or unit designed to burn gas 2 (other) subcategories during periods of gas curtailment or gas supply interruption of any duration are also not included in this definition.

Unit designed to burn liquid fuel that is a non-continental unit means an industrial, commercial, or institutional boiler or process heater meeting the definition of the unit designed to burn liquid subcategory located in the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Unit designed to burn solid fuel subcategory means any boiler or process heater that burns only solid fuels or at least 10 percent solid fuel on an annual heat input basis in combination with liquid fuels or gaseous fuels.

Vegetable oil means oils extracted from vegetation.

Voluntary Consensus Standards or VCS mean technical standards (*e.g.,* materials specifications, test methods, sampling procedures, business practices) developed or adopted by one or more voluntary consensus bodies. EPA/Office of Air Quality Planning and Standards, by precedent, has only used VCS that are written in English. Examples of VCS bodies are: American Society of Testing and Materials (ASTM 100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428-B2959, (800) 262-1373, *http://www.astm.org*), American Society of Mechanical Engineers (ASME ASME, Three Park Avenue, New York, NY 10016-5990, (800) 843-2763, *http://www.asme.org*), International Standards Organization (ISO 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, +41 22 749 01 11, *http://www.iso.org/iso/home.htm*), Standards Australia (AS Level 10, The Exchange Centre, 20 Bridge Street, Sydney, GPO Box 476, Sydney NSW 2001, + 61 2 9237 6171 *http://www.stadards.org.au*), British Standards Institution (BSI, 389 Chiswick High Road, London, W4 4AL, United Kingdom, +44 (0)20 8996 9001, *http://www.bsigroup.com*), Canadian Standards Association (CSA 5060 Spectrum Way, Suite 100, Mississauga, Ontario L4W 5N6, Canada, 800-463-6727, *http://www.csa.ca*), European Committee for Standardization (CEN CENELEC Management Centre Avenue Marnix 17 B-1000 Brussels, Belgium +32 2 550 08 11, *http://www.cen.eu/cen*), and German Engineering Standards (VDI VDI Guidelines Department, P.O. Box 10 11 39 40002, Duesseldorf, Germany, +49 211 6214-230, *http://www.vdi.eu*). The types of standards that are not considered VCS are standards developed by: The United States, *e.g.,* California (CARB) and Texas (TCEQ); industry groups, such as American Petroleum Institute (API), Gas Processors Association (GPA), and Gas Research Institute (GRI); and other branches of the U.S. government, *e.g.,* Department of Defense (DOD) and Department of Transportation (DOT). This does not preclude EPA from using standards developed by groups that are not VCS bodies within their rule. When this occurs, EPA has done searches and reviews for VCS equivalent to these non-EPA methods.

Waste heat boiler means a device that recovers normally unused energy (i.e., hot exhaust gas) and converts it to usable heat. Waste heat boilers are also referred to as heat recovery steam generators. Waste heat boilers are heat exchangers generating steam from incoming hot exhaust gas from an industrial (e.g., thermal oxidizer, kiln, furnace) or power (e.g., combustion turbine, engine) equipment. Duct burners are sometimes used to increase the temperature of the incoming hot exhaust gas.

Waste heat process heater means an enclosed device that recovers normally unused energy (i.e., hot exhaust gas) and converts it to usable heat. Waste heat process heaters are also referred to as recuperative process heaters. This definition includes both fired and unfired waste heat process heaters.

Wet scrubber means any add-on air pollution control device that mixes an aqueous stream or slurry with the exhaust gases from a boiler or process heater to control emissions of particulate matter or to absorb and neutralize acid gases, such as hydrogen chloride. A wet scrubber creates an aqueous stream or slurry as a byproduct of the emissions control process.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.

[78 FR 15664, Mar. 21, 2011, as amended at 78 FR 7163, Jan. 31, 2013]

Table 1 to Subpart DDDDD of Part 63—Emission Limits for New or Reconstructed Boilers and Process Heaters

As stated in § 63.7500, you must comply with the following applicable emission limits:

[Units with heat input capacity of 10 million Btu per hour or greater]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel.	a. HCl	2.2E-02 lb per MMBtu of heat input	2.5E-02 lb per MMBtu of steam output or 0.28 lb per MWh	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 liters per run.
	b. Mercury	8.0E-07 [a]lb per MMBtu of heat input	8.7E-07 [a]lb per MMBtu of steam output or 1.1E-05 [a]lb per MWh	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 4 dscm.
2. Units designed to burn coal/solid fossil fuel	a. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	1.1E-03 lb per MMBtu of steam output or 1.4E-02 lb per MWh; or (2.7E-05 lb per MMBtu of steam output or 2.9E-04 lb per MWh)	Collect a minimum of 3 dscm per run.
3. Pulverized coal boilers designed to burn coal/solid fossil fuel	a. Carbon monoxide (CO) (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	0.11 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
4. Stokers designed	a. CO (or	130 ppm by volume on	0.12 lb per MMBtu	1 hr minimum sampling

to burn coal/solid fossil fuel	CEMS)	a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	of steam output or 1.4 lb per MWh; 3-run average	time.
5. Fluidized bed units designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	0.11 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1.2E-01 lb per MMBtu of steam output or 1.5 lb per MWh; 3-run average	1 hr minimum sampling time.
7. Stokers/sloped grate/others designed to burn wet biomass fuel	a. CO (or CEMS)	620 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (390 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	5.8E-01 lb per MMBtu of steam output or 6.8 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (2.6E-05 lb per MMBtu of heat input)	3.5E-02 lb per MMBtu of steam output or 4.2E-01 lb per MWh; or (2.7E-05 lb per MMBtu of steam output or 3.7E-04 lb per MWh)	Collect a minimum of 2 dscm per run.
8. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	a. CO	460 ppm by volume on a dry basis corrected to 3 percent oxygen	4.2E-01 lb per MMBtu of steam output or 5.1 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (4.0E-03 lb per MMBtu of heat input)	3.5E-02 lb per MMBtu of steam output or 4.2E-01 lb per MWh; or (4.2E-03 lb per MMBtu of steam output or 5.6E-02 lb per	Collect a minimum of 2 dscm per run.

			MWh)	
9. Fluidized bed units designed to burn biomass/bio-based solids	a. CO (or CEMS)	230 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	2.2E-01 lb per MMBtu of steam output or 2.6 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	9.8E-03 lb per MMBtu of heat input; or (8.3E-05 [a]lb per MMBtu of heat input)	1.2E-02 lb per MMBtu of steam output or 0.14 lb per MWh; or (1.1E-04 [a]lb per MMBtu of steam output or 1.2E-03 [a]lb per MWh)	Collect a minimum of 3 dscm per run.
10. Suspension burners designed to burn biomass/bio-based solids	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	1.9 lb per MMBtu of steam output or 27 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (6.5E-03 lb per MMBtu of heat input)	3.1E-02 lb per MMBtu of steam output or 4.2E-01 lb per MWh; or (6.6E-03 lb per MMBtu of steam output or 9.1E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile burners designed to burn biomass/bio-based solids	a. CO (or CEMS)	330 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	3.5E-01 lb per MMBtu of steam output or 3.6 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.2E-03 lb per MMBtu of heat input; or (3.9E-05 lb per MMBtu of heat input)	4.3E-03 lb per MMBtu of steam output or 4.5E-02 lb per MWh; or (5.2E-05 lb per MMBtu of steam output or 5.5E-04 lb per MWh)	Collect a minimum of 3 dscm per run.
12. Fuel cell units	a. CO	910 ppm by volume on	1.1 lb per MMBtu of	1 hr minimum sampling

designed to burn biomass/bio-based solids		a dry basis corrected to 3 percent oxygen	steam output or 1.0E+01 lb per MWh	time.
	b. Filterable PM (or TSM)	2.0E-02 lb per MMBtu of heat input; or (2.9E-05 [a]lb per MMBtu of heat input)	3.0E-02 lb per MMBtu of steam output or 2.8E-01 lb per MWh; or (5.1E-05 lb per MMBtu of steam output or 4.1E-04 lb per MWh)	Collect a minimum of 2 dscm per run.
13. Hybrid suspension grate boiler designed to burn biomass/bio-based solids	a. CO (or CEMS)	1,100 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1.4 lb per MMBtu of steam output or 12 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.6E-02 lb per MMBtu of heat input; or (4.4E-04 lb per MMBtu of heat input)	3.3E-02 lb per MMBtu of steam output or 3.7E-01 lb per MWh; or (5.5E-04 lb per MMBtu of steam output or 6.2E-03 lb per MWh)	Collect a minimum of 3 dscm per run.
14. Units designed to burn liquid fuel	a. HCl	4.4E-04 lb per MMBtu of heat input	4.8E-04 lb per MMBtu of steam output or 6.1E-03 lb per MWh	For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	b. Mercury	4.8E-07 [a]lb per MMBtu of heat input	5.3E-07 [a]lb per MMBtu of steam output or 6.7E-06 [a]lb per MWh	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 4 dscm.
15. Units designed to burn heavy liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.3E-02 lb per MMBtu of heat input; or (7.5E-05 lb per MMBtu of heat input)	1.5E-02 lb per MMBtu of steam output or 1.8E-01 lb per MWh; or (8.2E-05 lb per MMBtu of steam output or	Collect a minimum of 3 dscm per run.

			1.1E-03 lb per MWh)	
16. Units designed to burn light liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	0.13 lb per MMBtu of steam output or 1.4 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-03 [a]lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	1.2E-03 [a]lb per MMBtu of steam output or 1.6E-02 [a]lb per MWh; or (3.2E-05 lb per MMBtu of steam output or 4.0E-04 lb per MWh)	Collect a minimum of 3 dscm per run.
17. Units designed to burn liquid fuel that are non-continental units	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average based on stack test	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.3E-02 lb per MMBtu of heat input; or (8.6E-04 lb per MMBtu of heat input)	2.5E-02 lb per MMBtu of steam output or 3.2E-01 lb per MWh; or (9.4E-04 lb per MMBtu of steam output or 1.2E-02 lb per MWh)	Collect a minimum of 4 dscm per run.
18. Units designed to burn gas 2 (other) gases	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	0.16 lb per MMBtu of steam output or 1.0 lb per MWh	1 hr minimum sampling time.
	b. HCl	1.7E-03 lb per MMBtu of heat input	2.9E-03 lb per MMBtu of steam output or 1.8E-02 lb per MWh	For M26A, Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E-06 lb per MMBtu of heat input	1.4E-05 lb per MMBtu of steam output or 8.3E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 3 dscm.
	d. Filterable PM (or TSM)	6.7E-03 lb per MMBtu of heat input; or (2.1E-04 lb per MMBtu of heat input)	1.2E-02 lb per MMBtu of steam output or 7.0E-02 lb per MWh; or (3.5E-04 lb per MMBtu of steam output or 2.2E-03 lb per MWh)	Collect a minimum of 3 dscm per run.

[a] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

[b] Incorporated by reference, see § 63.14.

[c] If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before January 31, 2013, you may comply with the emission limits in Tables 11, 12 or 13 to this subpart until January 31, 2016. On and after January 31, 2016, you must comply with the emission limits in Table 1 to this subpart.

[78 FR 7193, Jan. 31, 2013]

Table 2 to Subpart DDDDD of Part 63—Emission Limits for Existing Boilers and Process Heaters

As stated in § 63.7500, you must comply with the following applicable emission limits:

[Units with heat input capacity of 10 million Btu per hour or greater]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel	a. HCl	2.2E-02 lb per MMBtu of heat input	2.5E-02 lb per MMBtu of steam output or 0.27 lb per MWh	For M26A, Collect a minimum of 1 dscm per run; for M26, collect a minimum of 120 liters per run.
	b. Mercury	5.7E-06 lb per MMBtu of heat input	6.4E-06 lb per MMBtu of steam output or 7.3E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 3 dscm.
2. Units design to burn coal/solid fossil fuel	a. Filterable PM (or TSM)	4.0E-02 lb per MMBtu of heat input; or (5.3E-05 lb per MMBtu of heat input)	4.2E-02 lb per MMBtu of steam output or 4.9E-01 lb per MWh; or (5.6E-05 lb per MMBtu of steam output or 6.5E-04 lb per MWh)	Collect a minimum of 2 dscm per run.
3. Pulverized coal	a. CO (or	130 ppm by volume on	0.11 lb per MMBtu	1 hr minimum sampling

boilers designed to burn coal/solid fossil fuel	CEMS)	a dry basis corrected to 3 percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	of steam output or 1.4 lb per MWh; 3-run average	time.
4. Stokers designed to burn coal/solid fossil fuel	a. CO (or CEMS)	160 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	0.14 lb per MMBtu of steam output or 1.7 lb per MWh; 3-run average	1 hr minimum sampling time.
5. Fluidized bed units designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	0.12 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1.3E-01 lb per MMBtu of steam output or 1.5 lb per MWh; 3-run average	1 hr minimum sampling time.
7. Stokers/sloped grate/others designed to burn wet biomass fuel	a. CO (or CEMS)	1,500 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (720 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1.4 lb per MMBtu of steam output or 17 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.7E-02 lb per MMBtu of heat input; or (2.4E-04 lb per MMBtu of heat input)	4.3E-02 lb per MMBtu of steam output or 5.2E-01 lb per MWh; or (2.8E-04 lb per MMBtu of steam output or 3.4E-04 lb per MWh)	Collect a minimum of 2 dscm per run.
8. Stokers/sloped grate/others designed to burn kiln-dried biomass	a. CO	460 ppm by volume on a dry basis corrected to 3 percent oxygen	4.2E-01 lb per MMBtu of steam output or 5.1 lb per MWh	1 hr minimum sampling time.

fuel				
	b. Filterable PM (or TSM)	3.2E-01 lb per MMBtu of heat input; or (4.0E-03 lb per MMBtu of heat input)	3.7E-01 lb per MMBtu of steam output or 4.5 lb per MWh; or (4.6E-03 lb per MMBtu of steam output or 5.6E-02 lb per MWh)	Collect a minimum of 1 dscm per run.
9. Fluidized bed units designed to burn biomass/bio-based solid	a. CO (or CEMS)	470 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	4.6E-01 lb per MMBtu of steam output or 5.2 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-01 lb per MMBtu of heat input; or (1.2E-03 lb per MMBtu of heat input)	1.4E-01 lb per MMBtu of steam output or 1.6 lb per MWh; or (1.5E-03 lb per MMBtu of steam output or 1.7E-02 lb per MWh)	Collect a minimum of 1 dscm per run.
10. Suspension burners designed to burn biomass/bio-based solid	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	1.9 lb per MMBtu of steam output or 27 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	5.1E-02 lb per MMBtu of heat input; or (6.5E-03 lb per MMBtu of heat input)	5.2E-02 lb per MMBtu of steam output or 7.1E-01 lb per MWh; or (6.6E-03 lb per MMBtu of steam output or 9.1E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile burners designed to burn biomass/bio-based solid	a. CO (or CEMS)	770 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	8.4E-01 lb per MMBtu of steam output or 8.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.8E-01 lb per MMBtu of heat input; or (2.0E-03 lb per MMBtu of heat input)	3.9E-01 lb per MMBtu of steam output or 3.9 lb per MWh; or (2.8E-03 lb	Collect a minimum of 1 dscm per run.

			per MMBtu of steam output or 2.8E-02 lb per MWh)	
12. Fuel cell units designed to burn biomass/bio-based solid	a. CO	1,100 ppm by volume on a dry basis corrected to 3 percent oxygen	2.4 lb per MMBtu of steam output or 12 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.0E-02 lb per MMBtu of heat input; or (5.8E-03 lb per MMBtu of heat input)	5.5E-02 lb per MMBtu of steam output or 2.8E-01 lb per MWh; or (1.6E-02 lb per MMBtu of steam output or 8.1E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
13. Hybrid suspension grate units designed to burn biomass/bio-based solid	a. CO (or CEMS)	2,800 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	2.8 lb per MMBtu of steam output or 31 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	4.4E-01 lb per MMBtu of heat input; or (4.5E-04 lb per MMBtu of heat input)	5.5E-01 lb per MMBtu of steam output or 6.2 lb per MWh; or (5.7E-04 lb per MMBtu of steam output or 6.3E-03 lb per MWh)	Collect a minimum of 1 dscm per run.
14. Units designed to burn liquid fuel	a. HCl	1.1E-03 lb per MMBtu of heat input	1.4E-03 lb per MMBtu of steam output or 1.6E-02 lb per MWh	For M26A, collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	b. Mercury	2.0E-06 lb per MMBtu of heat input	2.5E-06 lb per MMBtu of steam output or 2.8E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B collect a minimum sample as specified in the method, for ASTM D6784 [b] collect a minimum of 2 dscm.
15. Units designed to burn heavy liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	6.2E-02 lb per MMBtu of heat input; or (2.0E-04 lb per MMBtu of heat	7.5E-02 lb per MMBtu of steam output or 8.6E-01 lb	Collect a minimum of 1 dscm per run.

		input)	per MWh; or (2.5E-04 lb per MMBtu of steam output or 2.8E-03 lb per MWh)	
16. Units designed to burn light liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	0.13 lb per MMBtu of steam output or 1.4 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	7.9E-03 lb per MMBtu of heat input; or (6.2E-05 lb per MMBtu of heat input)	9.6E-03 lb per MMBtu of steam output or 1.1E-01 lb per MWh; or (7.5E-05 lb per MMBtu of steam output or 8.6E-04 lb per MWh)	Collect a minimum of 3 dscm per run.
17. Units designed to burn liquid fuel that are non-continental units	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average based on stack test	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.7E-01 lb per MMBtu of heat input; or (8.6E-04 lb per MMBtu of heat input)	3.3E-01 lb per MMBtu of steam output or 3.8 lb per MWh; or (1.1E-03 lb per MMBtu of steam output or 1.2E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
18. Units designed to burn gas 2 (other) gases	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	0.16 lb per MMBtu of steam output or 1.0 lb per MWh	1 hr minimum sampling time.
	b. HCl	1.7E-03 lb per MMBtu of heat input	2.9E-03 lb per MMBtu of steam output or 1.8E-02 lb per MWh	For M26A, collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E-06 lb per MMBtu of heat input	1.4E-05 lb per MMBtu of steam output or 8.3E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 2 dscm.
	d. Filterable PM (or TSM)	6.7E-03 lb per MMBtu of heat input or (2.1E-04 lb per MMBtu of heat input)	1.2E-02 lb per MMBtu of steam output or 7.0E-02 lb per MWh; or (3.5E-04 lb per MMBtu of steam output or	Collect a minimum of 3 dscm per run.

			2.2E-03 lb per MWh)	

[a] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

[b] Incorporated by reference, see § 63.14.

[78 FR 7195, Jan. 31, 2013]

Table 3 to Subpart DDDDD of Part 63—Work Practice Standards

As stated in § 63.7500, you must comply with the following applicable work practice standards:

If your unit is . . .	You must meet the following . . .
1. A new or existing boiler or process heater with a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour in any of the following subcategories: unit designed to burn gas 1; unit designed to burn gas 2 (other); or unit designed to burn light liquid, or a limited use boiler or process heater	Conduct a tune-up of the boiler or process heater every 5 years as specified in § 63.7540.
2. A new or existing boiler or process heater without a continuous oxygen trim system and with heat input capacity of less than 10 million Btu per hour in the unit designed to burn heavy liquid or unit designed to burn solid fuel subcategories; or a new or existing boiler or process heater with heat input capacity of less than 10 million Btu per hour, but greater than 5 million Btu per hour, in any of the following subcategories: unit designed to burn gas 1; unit designed to burn gas 2 (other); or unit designed to burn light liquid	Conduct a tune-up of the boiler or process heater biennially as specified in § 63.7540.
3. A new or existing boiler or process heater without a continuous oxygen trim system and with heat input capacity of 10 million Btu per hour or greater	Conduct a tune-up of the boiler or process heater annually as specified in § 63.7540. Units in either the Gas 1 or Metal Process Furnace subcategories will conduct this tune-up as a work practice for all regulated emissions under this subpart. Units in all other subcategories will conduct this tune-up as a work practice for dioxins/furans.
4. An existing boiler or process heater located at a major source facility, not including limited use units	Must have a one-time energy assessment performed by a qualified energy assessor. An energy assessment completed on or after January 1, 2008, that meets or is amended to meet the energy assessment requirements in this table, satisfies the energy assessment requirement. A facility that operates under an energy management program

	compatible with ISO 50001 that includes the affected units also satisfies the energy assessment requirement. The energy assessment must include the following with extent of the evaluation for items a. to e. appropriate for the on-site technical hours listed in § 63.7575:
	a. A visual inspection of the boiler or process heater system.
	b. An evaluation of operating characteristics of the boiler or process heater systems, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints.
	c. An inventory of major energy use systems consuming energy from affected boilers and process heaters and which are under the control of the boiler/process heater owner/operator.
	d. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.
	e. A review of the facility's energy management practices and provide recommendations for improvements consistent with the definition of energy management practices, if identified.
	f. A list of cost-effective energy conservation measures that are within the facility's control.
	g. A list of the energy savings potential of the energy conservation measures identified.
	h. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.
5. An existing or new boiler or process heater subject to emission limits in Table 1 or 2 or 11 through 13 to this subpart during startup	You must operate all CMS during startup. For startup of a boiler or process heater, you must use one or a combination of the following clean fuels: natural gas, synthetic natural gas, propane, distillate oil, syngas, ultra-low sulfur diesel, fuel oil-soaked rags, kerosene, hydrogen, paper, cardboard, refinery gas, and liquefied petroleum gas.
	If you start firing coal/solid fossil fuel, biomass/bio-based solids, heavy liquid fuel, or gas 2 (other) gases, you must vent emissions to the main stack(s) and engage all of the applicable control devices except limestone injection in fluidized bed combustion (FBC) boilers, dry scrubber, fabric filter, selective non-catalytic reduction (SNCR), and selective catalytic reduction (SCR). You must start your limestone injection in FBC boilers, dry scrubber, fabric filter, SNCR, and SCR systems as expeditiously as possible. Startup ends when steam or heat is supplied

	for any purpose.
	You must comply with all applicable emission limits at all times except for startup or shutdown periods conforming with this work practice. You must collect monitoring data during periods of startup, as specified in § 63.7535(b). You must keep records during periods of startup. You must provide reports concerning activities and periods of startup, as specified in § 63.7555.
6. An existing or new boiler or process heater subject to emission limits in Tables 1 or 2 or 11 through 13 to this subpart during shutdown	You must operate all CMS during shutdown. While firing coal/solid fossil fuel, biomass/bio-based solids, heavy liquid fuel, or gas 2 (other) gases during shutdown, you must vent emissions to the main stack(s) and operate all applicable control devices, except limestone injection in FBC boilers, dry scrubber, fabric filter, SNCR, and SCR.
	You must comply with all applicable emissions limits at all times except for startup or shutdown periods conforming with this work practice. You must collect monitoring data during periods of shutdown, as specified in § 63.7535(b). You must keep records during periods of shutdown. You must provide reports concerning activities and periods of shutdown, as specified in § 63.7555.

[78 FR 7198, Jan. 31, 2013]

Table 4 to Subpart DDDDD of Part 63—Operating Limits for Boilers and Process Heaters

As stated in § 63.7500, you must comply with the applicable operating limits:

When complying with a Table 1, 2, 11, 12, or 13 numerical emission limit using . . .	You must meet these operating limits . . .
1. Wet PM scrubber control on a boiler not using a PM CPMS	Maintain the 30-day rolling average pressure drop and the 30-day rolling average liquid flow rate at or above the lowest one-hour average pressure drop and the lowest one-hour average liquid flow rate, respectively, measured during the most recent performance test demonstrating compliance with the PM emission limitation according to § 63.7530(b) and Table 7 to this subpart.
2. Wet acid gas (HCl) scrubber control on a boiler not using a HCl CEMS	Maintain the 30-day rolling average effluent pH at or above the lowest one-hour average pH and the 30-day rolling average liquid flow rate at or above the lowest one-hour average liquid flow rate measured during the most recent performance test demonstrating compliance with the HCl emission limitation according to § 63.7530(b) and Table 7 to this subpart.
3. Fabric filter control on units not using a PM CPMS	a. Maintain opacity to less than or equal to 10 percent opacity (daily block average); or
	b. Install and operate a bag leak detection system according to § 63.7525 and

	operate the fabric filter such that the bag leak detection system alert is not activated more than 5 percent of the operating time during each 6-month period.
4. Electrostatic precipitator control on units not using a PM CPMS	a. This option is for boilers and process heaters that operate dry control systems (i.e., an ESP without a wet scrubber). Existing and new boilers and process heaters must maintain opacity to less than or equal to 10 percent opacity (daily block average); or
	b. This option is only for boilers and process heaters not subject to PM CPMS or continuous compliance with an opacity limit (i.e., COMS). Maintain the 30-day rolling average total secondary electric power input of the electrostatic precipitator at or above the operating limits established during the performance test according to § 63.7530(b) and Table 7 to this subpart.
5. Dry scrubber or carbon injection control on a boiler not using a mercury CEMS	Maintain the minimum sorbent or carbon injection rate as defined in § 63.7575 of this subpart.
6. Any other add-on air pollution control type on units not using a PM CPMS	This option is for boilers and process heaters that operate dry control systems. Existing and new boilers and process heaters must maintain opacity to less than or equal to 10 percent opacity (daily block average).
7. Fuel analysis	Maintain the fuel type or fuel mixture such that the applicable emission rates calculated according to § 63.7530(c)(1), (2) and/or (3) is less than the applicable emission limits.
8. Performance testing	For boilers and process heaters that demonstrate compliance with a performance test, maintain the operating load of each unit such that it does not exceed 110 percent of the highest hourly average operating load recorded during the most recent performance test.
9. Oxygen analyzer system	For boilers and process heaters subject to a CO emission limit that demonstrate compliance with an O_2analyzer system as specified in § 63.7525(a), maintain the 30-day rolling average oxygen content at or above the lowest hourly average oxygen concentration measured during the most recent CO performance test, as specified in Table 8. This requirement does not apply to units that install an oxygen trim system since these units will set the trim system to the level specified in § 63.7525(a).
10. SO_2CEMS	For boilers or process heaters subject to an HCl emission limit that demonstrate compliance with an SO_2CEMS, maintain the 30-day rolling average SO_2emission rate at or below the highest hourly average SO_2concentration measured during the most recent HCl performance test, as specified in Table 8.

[78 FR 7199, Jan. 31, 2013]

Table 5 to Subpart DDDDD of Part 63—Performance Testing Requirements

As stated in § 63.7520, you must comply with the following requirements for performance testing for existing, new or reconstructed affected sources:

To conduct a performance test for	You must...	Using...

the following pollutant...		
1. Filterable PM	a. Select sampling ports location and the number of traverse points	Method 1 at 40 CFR part 60, appendix A-1 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2F, or 2G at 40 CFR part 60, appendix A-1 or A-2 to part 60 of this chapter.
	c. Determine oxygen or carbon dioxide concentration of the stack gas	Method 3A or 3B at 40 CFR part 60, appendix A-2 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981.[a]
	d. Measure the moisture content of the stack gas	Method 4 at 40 CFR part 60, appendix A-3 of this chapter.
	e. Measure the PM emission concentration	Method 5 or 17 (positive pressure fabric filters must use Method 5D) at 40 CFR part 60, appendix A-3 or A-6 of this chapter.
	f. Convert emissions concentration to lb per MMBtu emission rates	Method 19 F-factor methodology at 40 CFR part 60, appendix A-7 of this chapter.
2. TSM	a. Select sampling ports location and the number of traverse points	Method 1 at 40 CFR part 60, appendix A-1 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2F, or 2G at 40 CFR part 60, appendix A-1 or A-2 of this chapter.
	c. Determine oxygen or carbon dioxide concentration of the stack gas	Method 3A or 3B at 40 CFR part 60, appendix A-1 of this chapter, or ANSI/ASME PTC 19.10-1981.[a]
	d. Measure the moisture content of the stack gas	Method 4 at 40 CFR part 60, appendix A-3 of this chapter.
	e. Measure the TSM emission concentration	Method 29 at 40 CFR part 60, appendix A-8 of this chapter
	f. Convert emissions concentration to lb per MMBtu emission rates	Method 19 F-factor methodology at 40 CFR part 60, appendix A-7 of this chapter.
3. Hydrogen chloride	a. Select sampling ports location and the number of traverse points	Method 1 at 40 CFR part 60, appendix A-1 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2F, or 2G at 40 CFR part 60, appendix A-2 of this chapter.
	c. Determine oxygen or carbon dioxide	Method 3A or 3B at 40 CFR part 60, appendix A-2 of this chapter, or ANSI/ASME PTC 19.10-1981.[a]

	concentration of the stack gas	
	d. Measure the moisture content of the stack gas	Method 4 at 40 CFR part 60, appendix A-3 of this chapter.
	e. Measure the hydrogen chloride emission concentration	Method 26 or 26A (M26 or M26A) at 40 CFR part 60, appendix A-8 of this chapter.
	f. Convert emissions concentration to lb per MMBtu emission rates	Method 19 F-factor methodology at 40 CFR part 60, appendix A-7 of this chapter.
4. Mercury	a. Select sampling ports location and the number of traverse points	Method 1 at 40 CFR part 60, appendix A-1 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2F, or 2G at 40 CFR part 60, appendix A-1 or A-2 of this chapter.
	c. Determine oxygen or carbon dioxide concentration of the stack gas	Method 3A or 3B at 40 CFR part 60, appendix A-1 of this chapter, or ANSI/ASME PTC 19.10-1981.[a]
	d. Measure the moisture content of the stack gas	Method 4 at 40 CFR part 60, appendix A-3 of this chapter.
	e. Measure the mercury emission concentration	Method 29, 30A, or 30B (M29, M30A, or M30B) at 40 CFR part 60, appendix A-8 of this chapter or Method 101A at 40 CFR part 61, appendix B of this chapter, or ASTM Method D6784.[a]
	f. Convert emissions concentration to lb per MMBtu emission rates	Method 19 F-factor methodology at 40 CFR part 60, appendix A-7 of this chapter.
5. CO	a. Select the sampling ports location and the number of traverse points	Method 1 at 40 CFR part 60, appendix A-1 of this chapter.
	b. Determine oxygen concentration of the stack gas	Method 3A or 3B at 40 CFR part 60, appendix A-3 of this chapter, or ASTM D6522-00 (Reapproved 2005), or ANSI/ASME PTC 19.10-1981.[a]
	c. Measure the moisture content of the stack gas	Method 4 at 40 CFR part 60, appendix A-3 of this chapter.
	d. Measure the CO emission concentration	Method 10 at 40 CFR part 60, appendix A-4 of this chapter. Use a measurement span value of 2 times the concentration of the applicable emission limit.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7200, Jan. 31, 2013]

Table 6 to Subpart DDDDD of Part 63—Fuel Analysis Requirements

As stated in § 63.7521, you must comply with the following requirements for fuel analysis testing for existing, new or reconstructed affected sources. However, equivalent methods (as defined in § 63.7575) may be used in lieu of the prescribed methods at the discretion of the source owner or operator:

To conduct a fuel analysis for the following pollutant . . .	**You must . . .**	**Using . . .**
1. Mercury	a. Collect fuel samples	Procedure in § 63.7521(c) or ASTM D5192 [a], or ASTM D7430 [a], or ASTM D6883 [a], or ASTM D2234/D2234M [a](for coal) or EPA 1631 or EPA 1631E or ASTM D6323 [a](for solid), or EPA 821-R-01-013 (for liquid or solid), or ASTM D4177 [a](for liquid), or ASTM D4057 [a](for liquid), or equivalent.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.
	c. Prepare composited fuel samples	EPA SW-846-3050B [a](for solid samples), EPA SW-846-3020A [a](for liquid samples), ASTM D2013/D2013M [a](for coal), ASTM D5198 [a](for biomass), or EPA 3050 [a](for solid fuel), or EPA 821-R-01-013 [a](for liquid or solid), or equivalent.
	d. Determine heat content of the fuel type	ASTM D5865 [a](for coal) or ASTM E711 [a](for biomass), or ASTM D5864 [a]for liquids and other solids, or ASTM D240 [a]or equivalent.
	e. Determine moisture content of the fuel type	ASTM D3173 [a], ASTM E871 [a], or ASTM D5864 [a], or ASTM D240, or ASTM D95 [a](for liquid fuels), or ASTM D4006 [a](for liquid fuels), or ASTM D4177 [a](for liquid fuels) or ASTM D4057 [a](for liquid fuels), or equivalent.
	f. Measure mercury concentration in fuel sample	ASTM D6722 [a](for coal), EPA SW-846-7471B [a](for solid samples), or EPA SW-846-7470A [a](for liquid samples), or equivalent.
	g. Convert concentration into units of pounds of mercury per MMBtu of heat content	Equation 8 in § 63.7530.
	h. Calculate the mercury emission rate from the boiler or process heater in units of pounds per million Btu	Equations 10 and 12 in § 63.7530.
2. HCl	a. Collect fuel samples	Procedure in § 63.7521(c) or ASTM D5192 [a], or ASTM D7430 [a], or ASTM D6883 [a], or ASTM D2234/D2234M [a](for coal) or ASTM D6323 [a](for coal or biomass), ASTM D4177 [a](for liquid fuels) or ASTM D4057 [a](for liquid fuels), or equivalent.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.
	c. Prepare composited fuel samples	EPA SW-846-3050B [a](for solid samples), EPA SW-846-3020A [a](for liquid samples), ASTM D2013/D2013M§[a](for coal), or ASTM D5198§[a](for biomass), or EPA 3050 [a]or equivalent.

	d. Determine heat content of the fuel type	ASTM D5865 [a](for coal) or ASTM E711 [a](for biomass), ASTM D5864, ASTM D240 [a]or equivalent.
	e. Determine moisture content of the fuel type	ASTM D3173 [a]or ASTM E871 [a], or D5864 [a], or ASTM D240 [a], or ASTM D95[a](for liquid fuels), or ASTM D4006 [a](for liquid fuels), or ASTM D4177 [a](for liquid fuels) or ASTM D4057 [a](for liquid fuels) or equivalent.
	f. Measure chlorine concentration in fuel sample	EPA SW-846-9250 [a], ASTM D6721 [a], ASTM D4208 [a](for coal), or EPA SW-846-5050 [a]or ASTM E776 [a](for solid fuel), or EPA SW-846-9056 [a]or SW-846-9076 [a](for solids or liquids) or equivalent.
	g. Convert concentrations into units of pounds of HCl per MMBtu of heat content	Equation 7 in § 63.7530.
	h. Calculate the HCl emission rate from the boiler or process heater in units of pounds per million Btu	Equations 10 and 11 in § 63.7530.
3. Mercury Fuel Specification for other gas 1 fuels	a. Measure mercury concentration in the fuel sample and convert to units of micrograms per cubic meter	Method 30B (M30B) at 40 CFR part 60, appendix A-8 of this chapter or ASTM D5954 [a], ASTM D6350 [a], ISO 6978-1:2003(E) [a], or ISO 6978-2:2003(E) [a], or EPA-1631 [a]or equivalent.
	b. Measure mercury concentration in the exhaust gas when firing only the other gas 1 fuel is fired in the boiler or process heater	Method 29, 30A, or 30B (M29, M30A, or M30B) at 40 CFR part 60, appendix A-8 of this chapter or Method 101A or Method 102 at 40 CFR part 61, appendix B of this chapter, or ASTM Method D6784 [a]or equivalent.
4. TSM for solid fuels	a. Collect fuel samples	Procedure in § 63.7521(c) or ASTM D5192 [a], or ASTM D7430 [a], or ASTM D6883 [a], or ASTM D2234/D2234M [a](for coal) or ASTM D6323 [a](for coal or biomass), or ASTM D4177 [a],(for liquid fuels)or ASTM D4057 [a](for liquid fuels),or equivalent.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.
	c. Prepare composited fuel samples	EPA SW-846-3050B [a](for solid samples), EPA SW-846-3020A [a](for liquid samples), ASTM D2013/D2013M [a](for coal), ASTM D5198 [a]or TAPPI T266 [a](for biomass), or EPA 3050 [a]or equivalent.
	d. Determine heat content of the fuel type	ASTM D5865 [a](for coal) or ASTM E711 [a](for biomass), or ASTM D5864 [a]for liquids and other solids, or ASTM D240 [a]or equivalent.
	e. Determine moisture content of the fuel type	ASTM D3173 [a]or ASTM E871 [a], or D5864, or ASTM D240 [a], or ASTM D95 [a](for liquid fuels), or ASTM D4006[a](for liquid fuels), or ASTM D4177 [a](for liquid fuels) or ASTM D4057 [a](for liquid fuels), or equivalent.
	f. Measure TSM concentration in fuel sample	ASTM D3683 [a], or ASTM D4606 [a], or ASTM D6357 [a]or EPA 200.8 [a]or EPA SW-846-6020 [a], or EPA SW-846-6020A [a], or EPA SW-846-6010C [a], EPA 7060 [a]or EPA

		7060A [a](for arsenic only), or EPA SW-846-7740 [a](for selenium only).
	g. Convert concentrations into units of pounds of TSM per MMBtu of heat content	Equation 9 in § 63.7530.
	h. Calculate the TSM emission rate from the boiler or process heater in units of pounds per million Btu	Equations 10 and 13 in § 63.7530.

[a] Incorporated by reference, see § 63.14.

[78 FR 7201, Jan. 31, 2013]

Table 7 to Subpart DDDDD of Part 63—Establishing Operating Limits

As stated in § 63.7520, you must comply with the following requirements for establishing operating limits:

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
1. PM, TSM, or mercury	a. Wet scrubber operating parameters	i. Establish a site-specific minimum scrubber pressure drop and minimum flow rate operating limit according to § 63.7530(b)	(1) Data from the scrubber pressure drop and liquid flow rate monitors and the PM or mercury performance test	(a) You must collect scrubber pressure drop and liquid flow rate data every 15 minutes during the entire period of the performance tests.
				(b) Determine the lowest hourly average scrubber pressure drop and liquid flow rate by computing the hourly averages using all of the 15-minute readings taken during each performance test.
	b. Electrostatic precipitator operating parameters (option only for units that operate wet scrubbers)	i. Establish a site-specific minimum total secondary electric power input according to § 63.7530(b)	(1) Data from the voltage and secondary amperage monitors during the PM or mercury performance test	(a) You must collect secondary voltage and secondary amperage for each ESP cell and calculate total secondary electric power input data every 15 minutes during the entire period of the performance tests.
				(b) Determine the average total secondary electric power input by computing

				the hourly averages using all of the 15-minute readings taken during each performance test.
2. HCl	a. Wet scrubber operating parameters	i. Establish site-specific minimum pressure drop, effluent pH, and flow rate operating limits according to § 63.7530(b)	(1) Data from the pressure drop, pH, and liquid flow-rate monitors and the HCl performance test	(a) You must collect pH and liquid flow-rate data every 15 minutes during the entire period of the performance tests.
				(b) Determine the hourly average pH and liquid flow rate by computing the hourly averages using all of the 15-minute readings taken during each performance test.
	b. Dry scrubber operating parameters	i. Establish a site-specific minimum sorbent injection rate operating limit according to § 63.7530(b). If different acid gas sorbents are used during the HCl performance test, the average value for each sorbent becomes the site-specific operating limit for that sorbent	(1) Data from the sorbent injection rate monitors and HCl or mercury performance test	(a) You must collect sorbent injection rate data every 15 minutes during the entire period of the performance tests.
				(b) Determine the hourly average sorbent injection rate by computing the hourly averages using all of the 15-minute readings taken during each performance test.
				(c) Determine the lowest hourly average of the three test run averages established during the performance test as your operating limit. When your unit operates at lower loads, multiply your sorbent injection rate by the load fraction (e.g., for 50 percent load, multiply the injection rate operating limit by 0.5) to determine the required injection rate.
	c. Alternative	i. Establish a site-	(1) Data from	(a) You must collect the

	Maximum SO_2 emission rate	specific maximum SO_2 emission rate operating limit according to § 63.7530(b)	SO_2 CEMS and the HCl performance test	SO_2 emissions data according to § 63.7525(m) during the most recent HCl performance tests.
				(b) The maximum SO_2 emission rate is equal to the lowest hourly average SO_2 emission rate measured during the most recent HCl performance tests.
3. Mercury	a. Activated carbon injection	i. Establish a site-specific minimum activated carbon injection rate operating limit according to § 63.7530(b)	(1) Data from the activated carbon rate monitors and mercury performance test	(a) You must collect activated carbon injection rate data every 15 minutes during the entire period of the performance tests.
				(b) Determine the hourly average activated carbon injection rate by computing the hourly averages using all of the 15-minute readings taken during each performance test.
				(c) Determine the lowest hourly average established during the performance test as your operating limit. When your unit operates at lower loads, multiply your activated carbon injection rate by the load fraction (e.g., actual heat input divided by heat input during performance test, for 50 percent load, multiply the injection rate operating limit by 0.5) to determine the required injection rate.
4. Carbon monoxide	a. Oxygen	i. Establish a unit-specific limit for minimum oxygen level according to § 63.7520	(1) Data from the oxygen analyzer system specified in § 63.7525(a)	(a) You must collect oxygen data every 15 minutes during the entire period of the performance tests.
				(b) Determine the hourly average oxygen concentration by computing the hourly averages using all of the 15-minute readings taken during each performance test.
				(c) Determine the lowest

				hourly average established during the performance test as your minimum operating limit.
5. Any pollutant for which compliance is demonstrated by a performance test	a. Boiler or process heater operating load	i. Establish a unit specific limit for maximum operating load according to § 63.7520(c)	(1) Data from the operating load monitors or from steam generation monitors	(a) You must collect operating load or steam generation data every 15 minutes during the entire period of the performance test.
				(b) Determine the average operating load by computing the hourly averages using all of the 15-minute readings taken during each performance test.
				(c) Determine the average of the three test run averages during the performance test, and multiply this by 1.1 (110 percent) as your operating limit.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7203, Jan. 31, 2013]

Table 8 to Subpart DDDDD of Part 63—Demonstrating Continuous Compliance

As stated in § 63.7540, you must show continuous compliance with the emission limitations for each boiler or process heater according to the following:

If you must meet the following operating limits or work practice standards . . .	You must demonstrate continuous compliance by . . .
1. Opacity	a. Collecting the opacity monitoring system data according to § 63.7525(c) and § 63.7535; and
	b. Reducing the opacity monitoring data to 6-minute averages; and
	c. Maintaining opacity to less than or equal to 10 percent (daily block average).
2. PM CPMS	a. Collecting the PM CPMS output data according to § 63.7525;
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average PM CPMS output data to less than the operating limit established during the performance test according to § 63.7530(b)(4).
3. Fabric Filter Bag Leak Detection Operation	Installing and operating a bag leak detection system according to § 63.7525 and operating the fabric filter such that the requirements in

	§ 63.7540(a)(9) are met.
4. Wet Scrubber Pressure Drop and Liquid Flow-rate	a. Collecting the pressure drop and liquid flow rate monitoring system data according to §§ 63.7525 and 63.7535; and
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average pressure drop and liquid flow-rate at or above the operating limits established during the performance test according to § 63.7530(b).
5. Wet Scrubber pH	a. Collecting the pH monitoring system data according to §§ 63.7525 and 63.7535; and
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average pH at or above the operating limit established during the performance test according to § 63.7530(b).
6. Dry Scrubber Sorbent or Carbon Injection Rate	a. Collecting the sorbent or carbon injection rate monitoring system data for the dry scrubber according to §§ 63.7525 and 63.7535; and
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average sorbent or carbon injection rate at or above the minimum sorbent or carbon injection rate as defined in § 63.7575.
7. Electrostatic Precipitator Total Secondary Electric Power Input	a. Collecting the total secondary electric power input monitoring system data for the electrostatic precipitator according to §§ 63.7525 and 63.7535; and
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average total secondary electric power input at or above the operating limits established during the performance test according to § 63.7530(b).
8. Emission limits using fuel analysis	a. Conduct monthly fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart; and
	b. Reduce the data to 12-month rolling averages; and
	c. Maintain the 12-month rolling average at or below the applicable emission limit for HCl or mercury or TSM in Tables 1 and 2 or 11 through 13 to this subpart.
9. Oxygen content	a. Continuously monitor the oxygen content using an oxygen analyzer system according to § 63.7525(a). This requirement does not apply to units that install an oxygen trim system since these units will set the trim system to the level specified in § 63.7525(a)(2).
	b. Reducing the data to 30-day rolling averages; and
	c. Maintain the 30-day rolling average oxygen content at or above the lowest hourly average oxygen level measured during the most recent CO performance test.
10. Boiler or process heater operating load	a. Collecting operating load data or steam generation data every 15 minutes.
	b. Maintaining the operating load such that it does not exceed 110 percent

	of the highest hourly average operating load recorded during the most recent performance test according to § 63.7520(c).
11. SO_2emissions using SO_2CEMS	a. Collecting the SO_2CEMS output data according to § 63.7525;
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average SO_2CEMS emission rate to a level at or below the minimum hourly SO_2rate measured during the most recent HCl performance test according to § 63.7530.

[78 FR 7204, Jan. 31, 2013]

Table 9 to Subpart DDDDD of Part 63—Reporting Requirements

As stated in § 63.7550, you must comply with the following requirements for reports:

You must submit a(n)	The report must contain . . .	You must submit the report . . .
1. Compliance report	a. Information required in § 63.7550(c)(1) through (5); and	Semiannually, annually, biennially, or every 5 years according to the requirements in § 63.7550(b).
	b. If there are no deviations from any emission limitation (emission limit and operating limit) that applies to you and there are no deviations from the requirements for work practice standards in Table 3 to this subpart that apply to you, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in § 63.8(c)(7), a statement that there were no periods during which the CMSs were out-of-control during the reporting period; and	
	c. If you have a deviation from any emission limitation (emission limit and operating limit) where you are not using a CMS to comply with that emission limit or operating limit, or a deviation from a work practice standard during the reporting period, the report must contain the information in § 63.7550(d); and	
	d. If there were periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in § 63.8(c)(7), or otherwise not operating, the report must contain the information in § 63.7550(e)	

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7205, Jan. 31, 2013]

Table 10 to Subpart DDDDD of Part 63—Applicability of General Provisions to Subpart DDDDD

As stated in § 63.7565, you must comply with the applicable General Provisions according to the following:

Citation	Subject	Applies to subpart DDDDD
§ 63.1	Applicability	Yes.
§ 63.2	Definitions	Yes. Additional terms defined in § 63.7575
§ 63.3	Units and Abbreviations	Yes.
§ 63.4	Prohibited Activities and Circumvention	Yes.
§ 63.5	Preconstruction Review and Notification Requirements	Yes.
§ 63.6(a), (b)(1)-(b)(5), (b)(7), (c)	Compliance with Standards and Maintenance Requirements	Yes.
§ 63.6(e)(1)(i)	General duty to minimize emissions.	No. See § 63.7500(a)(3) for the general duty requirement.
§ 63.6(e)(1)(ii)	Requirement to correct malfunctions as soon as practicable.	No.
§ 63.6(e)(3)	Startup, shutdown, and malfunction plan requirements.	No.
§ 63.6(f)(1)	Startup, shutdown, and malfunction exemptions for compliance with non-opacity emission standards.	No.
§ 63.6(f)(2) and (3)	Compliance with non-opacity emission standards.	Yes.
§ 63.6(g)	Use of alternative standards	Yes.
§ 63.6(h)(1)	Startup, shutdown, and malfunction exemptions to opacity standards.	No. See § 63.7500(a).
§ 63.6(h)(2) to (h)(9)	Determining compliance with opacity emission standards	Yes.
§ 63.6(i)	Extension of compliance	Yes. Note: Facilities may also request extensions of compliance for the installation of combined heat and power, waste heat recovery, or gas pipeline or

		fuel feeding infrastructure as a means of complying with this subpart.
§ 63.6(j)	Presidential exemption.	Yes.
§ 63.7(a), (b), (c), and (d)	Performance Testing Requirements	Yes.
§ 63.7(e)(1)	Conditions for conducting performance tests	No. Subpart DDDDD specifies conditions for conducting performance tests at § 63.7520(a) to (c).
§ 63.7(e)(2)-(e)(9), (f), (g), and (h)	Performance Testing Requirements	Yes.
§ 63.8(a) and (b)	Applicability and Conduct of Monitoring	Yes.
§ 63.8(c)(1)	Operation and maintenance of CMS	Yes.
§ 63.8(c)(1)(i)	General duty to minimize emissions and CMS operation	No. See § 63.7500(a)(3).
§ 63.8(c)(1)(ii)	Operation and maintenance of CMS	Yes.
§ 63.8(c)(1)(iii)	Startup, shutdown, and malfunction plans for CMS	No.
§ 63.8(c)(2) to (c)(9)	Operation and maintenance of CMS	Yes.
§ 63.8(d)(1) and (2)	Monitoring Requirements, Quality Control Program	Yes.
§ 63.8(d)(3)	Written procedures for CMS	Yes, except for the last sentence, which refers to a startup, shutdown, and malfunction plan. Startup, shutdown, and malfunction plans are not required.
§ 63.8(e)	Performance evaluation of a CMS	Yes.
§ 63.8(f)	Use of an alternative monitoring method.	Yes.
§ 63.8(g)	Reduction of monitoring data	Yes.
§ 63.9	Notification Requirements	Yes.
§ 63.10(a), (b)(1)	Recordkeeping and Reporting Requirements	Yes.
§ 63.10(b)(2)(i)	Recordkeeping of occurrence and duration of startups or shutdowns	Yes.
§ 63.10(b)(2)(ii)	Recordkeeping of	No. See § 63.7555(d)(7) for

	malfunctions	recordkeeping of occurrence and duration and § 63.7555(d)(8) for actions taken during malfunctions.
§ 63.10(b)(2)(iii)	Maintenance records	Yes.
§ 63.10(b)(2)(iv) and (v)	Actions taken to minimize emissions during startup, shutdown, or malfunction	No.
§ 63.10(b)(2)(vi)	Recordkeeping for CMS malfunctions	Yes.
§ 63.10(b)(2)(vii) to (xiv)	Other CMS requirements	Yes.
§ 63.10(b)(3)	Recordkeeping requirements for applicability determinations	No.
§ 63.10(c)(1) to (9)	Recordkeeping for sources with CMS	Yes.
§ 63.10(c)(10) and (11)	Recording nature and cause of malfunctions, and corrective actions	No. See § 63.7555(d)(7) for recordkeeping of occurrence and duration and § 63.7555(d)(8) for actions taken during malfunctions.
§ 63.10(c)(12) and (13)	Recordkeeping for sources with CMS	Yes.
§ 63.10(c)(15)	Use of startup, shutdown, and malfunction plan	No.
§ 63.10(d)(1) and (2)	General reporting requirements	Yes.
§ 63.10(d)(3)	Reporting opacity or visible emission observation results	No.
§ 63.10(d)(4)	Progress reports under an extension of compliance	Yes.
§ 63.10(d)(5)	Startup, shutdown, and malfunction reports	No. See § 63.7550(c)(11) for malfunction reporting requirements.
§ 63.10(e)	Additional reporting requirements for sources with CMS	Yes.
§ 63.10(f)	Waiver of recordkeeping or reporting requirements	Yes.
§ 63.11	Control Device Requirements	No.
§ 63.12	State Authority and Delegation	Yes.
§ 63.13-63.16	Addresses, Incorporation	Yes.

	by Reference, Availability of Information, Performance Track Provisions	
§ 63.1(a)(5),(a)(7)-(a)(9), (b)(2), (c)(3)-(4), (d), 63.6(b)(6), (c)(3), (c)(4), (d), (e)(2), (e)(3)(ii), (h)(3), (h)(5)(iv), 63.8(a)(3), 63.9(b)(3), (h)(4), 63.10(c)(2)-(4), (c)(9).	Reserved	No.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7205, Jan. 31, 2013]

Table 11 to Subpart DDDDD of Part 63—Toxic Equivalency Factors for Dioxins/Furans

TABLE 11 TO SUBPART DDDDD OF PART 63—TOXIC EQUIVALENCY FACTORS FOR DIOXINS/FURANS

Dioxin/furan congener	**Toxic equivalency factor**
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	1
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01
octachlorinated dibenzo-p-dioxin	0.0003
2,3,7,8-tetrachlorinated dibenzofuran	0.1
2,3,4,7,8-pentachlorinated dibenzofuran	0.3
1,2,3,7,8-pentachlorinated dibenzofuran	0.03
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
octachlorinated dibenzofuran	0.0003

[76 FR 15664, Mar. 21, 2011]

EDITORIAL NOTE: At 78 FR 7206, Jan. 31, 2013, Table 11 was added, effective Apr. 1, 2013. However Table 11 could not be added as a Table 11 is already in existence.

Table 12 to Subpart DDDDD of Part 63—Alternative Emission Limits for New or Reconstructed Boilers and Process Heaters That Commenced Construction or Reconstruction After June 4, 2010, and Before May 20, 2011

If your boiler or process heater is in this subcategory	For the following pollutants	The emissions must not exceed the following emission limits, except during periods of startup and shutdown	Using this specified sampling volume or test run duration
1. Units in all subcategories designed to burn solid fuel	a. Mercury	3.5E-06 lb per MMBtu of heat input	For M29, collect a minimum of 2 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [a] collect a minimum of 2 dscm.
2. Units in all subcategories designed to burn solid fuel that combust at least 10 percent biomass/bio-based solids on an annual heat input basis and less than 10 percent coal/solid fossil fuels on an annual heat input basis	a. Particulate Matter	0.008 lb per MMBtu of heat input (30-day rolling average for units 250 MMBtu/hr or greater, 3-run average for units less than 250 MMBtu/hr)	Collect a minimum of 1 dscm per run.
	b. Hydrogen Chloride	0.004 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26, collect a minimum of 60 liters per run.
3. Units in all subcategories designed to burn solid fuel that combust at least 10 percent coal/solid fossil fuels on an annual heat input basis and less than 10 percent biomass/bio-based solids on an annual heat input basis	a. Particulate Matter	0.0011 lb per MMBtu of heat input (30-day rolling average for units 250 MMBtu/hr or greater, 3-run average for units less than 250 MMBtu/hr)	Collect a minimum of 3 dscm per run.
	b. Hydrogen Chloride	0.0022 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26, collect a minimum of 60 liters per run.
4. Units designed to burn pulverized coal/solid fossil fuel	a. CO	90 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.003 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
5. Stokers designed to burn coal/solid fossil fuel	a. CO	7 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.003 ng/dscm (TEQ) corrected to 7 percent	Collect a minimum of 4 dscm per run.

		oxygen	
6. Fluidized bed units designed to burn coal/solid fossil fuel	a. CO	30 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.002 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
7. Stokers designed to burn biomass/bio-based solids	a. CO	560 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.005 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
8. Fluidized bed units designed to burn biomass/bio-based solids	a. CO	260 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.02 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
9. Suspension burners/Dutch Ovens designed to burn biomass/bio-based solids	a. CO	1,010 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.2 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
10. Fuel cells designed to burn biomass/bio-based solids	a. CO	470 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.003 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
11. Hybrid suspension/grate units designed to burn biomass/bio-based solids	a. CO	1,500 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Dioxins/Furans	0.2 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
12. Units designed to burn liquid fuel	a. Particulate Matter	0.002 lb per MMBtu of heat input (30-day rolling average for units 250 MMBtu/hr or greater, 3-run average for units less than 250 MMBtu/hr)	Collect a minimum of 2 dscm per run.

	b. Hydrogen Chloride	0.0032 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26, collect a minimum of 60 liters per run.
	c. Mercury	3.0E-07 lb per MMBtu of heat input	For M29, collect a minimum of 2 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [a]collect a minimum of 2 dscm.
	d. CO	3 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	e. Dioxins/Furans	0.002 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
13. Units designed to burn liquid fuel located in non-continental States and territories	a. Particulate Matter	0.002 lb per MMBtu of heat input (30-day rolling average for units 250 MMBtu/hr or greater, 3-run average for units less than 250 MMBtu/hr)	Collect a minimum of 2 dscm per run.
	b. Hydrogen Chloride	0.0032 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26, collect a minimum of 60 liters per run.
	c. Mercury	7.8E-07 lb per MMBtu of heat input	For M29, collect a minimum of 1 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [a]collect a minimum of 2 dscm.
	d. CO	51 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	e. Dioxins/Furans	0.002 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.
14. Units designed to burn gas 2 (other) gases	a. Particulate Matter	0.0067 lb per MMBtu of heat input (30-day rolling average for units 250 MMBtu/hr or greater, 3-run average for units less than 250 MMBtu/hr)	Collect a minimum of 1 dscm per run.
	b. Hydrogen	0.0017 lb per MMBtu	For M26A, collect a

	Chloride	of heat input	minimum of 1 dscm per run; for M26, collect a minimum of 60 liters per run.
	c. Mercury	7.9E-06 lb per MMBtu of heat input	For M29, collect a minimum of 1 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [a]collect a minimum of 2 dscm.
	d. CO	3 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	e. Dioxins/Furans	0.08 ng/dscm (TEQ) corrected to 7 percent oxygen	Collect a minimum of 4 dscm per run.

[a] Incorporated by reference, see § 63.14.

[76 FR 15664, Mar. 21, 2011]

Editorial Note: At 78 FR 7208, Jan. 31, 2013, Table 12 was added, effective Apr. 1, 2013. However, Table 12 could not be added as a Table 12 is already in existence.

Table 13 to Subpart DDDDD of Part 63—Alternative Emission Limits for New or Reconstructed Boilers and Process Heaters That Commenced Construction or Reconstruction After December 23, 2011, and Before January 31, 2013

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel	a. HCl	0.022 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 liters per run.
	b. Mercury	8.6E-07 [a]lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 4 dscm.
2. Pulverized coal boilers designed to burn coal/solid fossil fuel	a. Carbon monoxide (CO) (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.8E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.

3. Stokers designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.8E-02 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
4. Fluidized bed units designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
5. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
6. Stokers/sloped grate/others designed to burn wet biomass fuel	a. CO (or CEMS)	620 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (410 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (2.6E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
7. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	a. CO	460 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.2E-01 lb per MMBtu of heat input; or (4.0E-03 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
8. Fluidized bed units designed to burn biomass/bio-based solids	a. CO (or CEMS)	230 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1 hr minimum sampling time.

	b. Filterable PM (or TSM)	9.8E-03 lb per MMBtu of heat input; or (8.3E-05 [a]lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
9. Suspension burners designed to burn biomass/bio-based solids	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	5.1E-02 lb per MMBtu of heat input; or (6.5E-03 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
10. Dutch Ovens/Pile burners designed to burn biomass/bio-based solids	a. CO (or CEMS)	810 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.6E-02 lb per MMBtu of heat input; or (3.9E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
11. Fuel cell units designed to burn biomass/bio-based solids	a. CO	910 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.0E-02 lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
12. Hybrid suspension grate boiler designed to burn biomass/bio-based solids	a. CO (or CEMS)	1,500 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.6E-02 lb per MMBtu of heat input; or (4.4E-04 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
13. Units designed to burn liquid fuel	a. HCl	1.2E-03 lb per MMBtu of heat input	For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	b. Mercury	4.9E-07 [a]lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 4 dscm.
14. Units designed to burn heavy liquid fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent	1 hr minimum sampling time.

		oxygen, 3-run average; or (18 ppm by volume on a dry basis corrected to 3 percent oxygen, 10-day rolling average)	
	b. Filterable PM (or TSM)	1.3E-03 lb per MMBtu of heat input; or (7.5E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
15. Units designed to burn light liquid fuel	a. CO (or CEMS)	130 [a]ppm by volume on a dry basis corrected to 3 percent oxygen; or (60 ppm by volume on a dry basis corrected to 3 percent oxygen, 1-day block average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-03 [a]lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
16. Units designed to burn liquid fuel that are non-continental units	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average based on stack test; or (91 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-hour rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.3E-02 lb per MMBtu of heat input; or (8.6E-04 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
17. Units designed to burn gas 2 (other) gases	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. HCl	1.7E-03 lb per MMBtu of heat input	For M26A, Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E-06 lb per MMBtu of heat input	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 3 dscm.
	d. Filterable PM (or TSM)	6.7E-03 lb per MMBtu of heat input; or (2.1E-04 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.

[a] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit and you are not required to conduct testing for CEMS or CPMS monitor certification, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

[b] Incorporated by reference, see § 63.14.

[78 FR 7210, Jan. 31, 2013]

Attachment C

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES (CONTINUED)

Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

SOURCE: 69 FR 33506, June 15, 2004, unless otherwise noted.

What This Subpart Covers

63.6580 What is the purpose of subpart ZZZZ?

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

[73 FR 3603, Jan. 18, 2008]

§ 63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

(c) An area source of HAP emissions is a source that is not a major source.

(d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

(e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.

(f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f).

(1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

[69 FR 33506, June 15, 2004, as amended at 73 FR 3603, Jan. 18, 2008; 78 FR 6700, Jan. 30, 2013]

§ 63.6590 What parts of my plant does this subpart cover?

This subpart applies to each affected source.

(a) *Affected source.* An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) *Existing stationary RICE.*

(i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.

(ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iii) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) *New stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(3) *Reconstructed stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(b) *Stationary RICE subject to limited requirements.* (1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of § 63.6645(f).

(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(2) A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of § 63.6645(f) and the requirements of §§ 63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.

(3) The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:

(i) Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(ii) Existing spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(iii) Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(iv) Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(v) Existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(c) *Stationary RICE subject to Regulations under 40 CFR Part 60.* An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

(1) A new or reconstructed stationary RICE located at an area source;

(2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(3) A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions;

(4) A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(5) A new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(7) A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9674, Mar. 3, 2010; 75 FR 37733, June 30, 2010; 75 FR 51588, Aug. 20, 2010; 78 FR 6700, Jan. 30, 2013]

§ 63.6595 When do I have to comply with this subpart?

(a) *Affected sources.* (1) If you have an existing stationary RICE, excluding existing non-emergency CI stationary RICE, with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the applicable emission limitations, operating limitations and other requirements no later than June 15, 2007. If you have an existing non-emergency CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, an existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than May 3, 2013. If you have an existing stationary SI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary SI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than October 19, 2013.

(2) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart no later than August 16, 2004.

(3) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions after August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(4) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(5) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(6) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(7) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(b) *Area sources that become major sources.* If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the compliance dates in paragraphs (b)(1) and (2) of this section apply to you.

(1) Any stationary RICE for which construction or reconstruction is commenced after the date when your area source becomes a major source of HAP must be in compliance with this subpart upon startup of your affected source.

(2) Any stationary RICE for which construction or reconstruction is commenced before your area source becomes a major source of HAP must be in compliance with the provisions of this subpart that are applicable to RICE located at major sources within 3 years after your area source becomes a major source of HAP.

(c) If you own or operate an affected source, you must meet the applicable notification requirements in § 63.6645 and in 40 CFR part 63, subpart A.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 78 FR 6701, Jan. 30, 2013]

Emission and Operating Limitations

§ 63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

(a) If you own or operate an existing, new, or reconstructed spark ignition 4SRB stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 1a to this subpart and the operating limitations in Table 1b to this subpart which apply to you.

(b) If you own or operate a new or reconstructed 2SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, a new or reconstructed 4SLB stationary

RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, or a new or reconstructed CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

(c) If you own or operate any of the following stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the emission limitations in Tables 1a, 2a, 2c, and 2d to this subpart or operating limitations in Tables 1b and 2b to this subpart: an existing 2SLB stationary RICE; an existing 4SLB stationary RICE; a stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis; an emergency stationary RICE; or a limited use stationary RICE.

(d) If you own or operate an existing non-emergency stationary CI RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2c to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010]

§ 63.6601 What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart. If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at major source of HAP emissions manufactured on or after January 1, 2008, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010]

§ 63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations and other requirements in Table 2c to this subpart which apply to you. Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

[78 FR 6701, Jan. 30, 2013]

§ 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

(a) If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart that apply to you.

(b) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meets either paragraph (b)(1) or (2) of this section, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. Existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meet either paragraph (b)(1) or (2) of this section must meet the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart.

(1) The area source is located in an area of Alaska that is not accessible by the Federal Aid Highway System (FAHS).

(2) The stationary RICE is located at an area source that meets paragraphs (b)(2)(i), (ii), and (iii) of this section.

(i) The only connection to the FAHS is through the Alaska Marine Highway System (AMHS), or the stationary RICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid.

(ii) At least 10 percent of the power generated by the stationary RICE on an annual basis is used for residential purposes.

(iii) The generating capacity of the area source is less than 12 megawatts, or the stationary RICE is used exclusively for backup power for renewable energy.

(c) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located on an offshore vessel that is an area source of HAP and is a nonroad vehicle that is an Outer Continental Shelf (OCS) source as defined in 40 CFR 55.2, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. You must meet all of the following management practices:

(1) Change oil every 1,000 hours of operation or annually, whichever comes first. Sources have the option to utilize an oil analysis program as described in § 63.6625(i) in order to extend the specified oil change requirement.

(2) Inspect and clean air filters every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(3) Inspect fuel filters and belts, if installed, every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(4) Inspect all flexible hoses every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.

(d) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and that is subject to an enforceable state or local standard that requires the engine to be replaced no later than June 1, 2018, you may until January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018, choose to comply with the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart instead of the applicable emission limitations in Table 2d, operating limitations in Table 2b, and crankcase ventilation system requirements in § 63.6625(g). You must comply with the emission limitations in Table 2d and operating limitations in Table 2b that apply for non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018. You must also comply with the crankcase ventilation system requirements in § 63.6625(g) by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018.

(e) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 3 (Tier 2 for engines above 560 kilowatt (kW)) emission standards in Table 1 of 40 CFR 89.112, you may comply with the requirements under this part by meeting the requirements for Tier 3 engines (Tier 2 for engines above 560 kW) in 40 CFR part 60 subpart IIII instead of the emission limitations and other requirements that would otherwise apply under this part for existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions.

(f) An existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP must meet the definition of remote stationary RICE in § 63.6675 on the initial compliance date for the engine, October 19, 2013, in order to be considered a remote stationary RICE under this subpart. Owners and operators of existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that meet the definition of remote stationary RICE in § 63.6675 of this subpart as of October 19, 2013 must evaluate the status of their stationary RICE every 12 months. Owners and operators must keep records of the initial and annual evaluation of the status of the engine. If the evaluation indicates that the stationary RICE no longer meets the definition of remote stationary RICE in § 63.6675 of this subpart, the owner or operator must comply with all of the requirements for existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that are not remote stationary RICE within 1 year of the evaluation.

[75 FR 9675, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6701, Jan. 30, 2013]

§ 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

(a) If you own or operate an existing non-emergency, non-black start CI stationary RICE with a site rating of more than 300 brake HP with a displacement of less than 30 liters per cylinder that uses diesel fuel, you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel.

(b) Beginning January 1, 2015, if you own or operate an existing emergency CI stationary RICE with a site rating of more than 100 brake HP and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in § 63.6640(f)(4)(ii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

(c) Beginning January 1, 2015, if you own or operate a new emergency CI stationary RICE with a site rating of more than 500 brake HP and a displacement of less than 30 liters per cylinder located at a major source of HAP that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

(d) Existing CI stationary RICE located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2), or are on offshore vessels that meet § 63.6603(c) are exempt from the requirements of this section.

[78 FR 6702, Jan. 30, 2013]

General Compliance Requirements

§ 63.6605 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations, operating limitations, and other requirements in this subpart that apply to you at all times.

(b) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[75 FR 9675, Mar. 3, 2010, as amended at 78 FR 6702, Jan. 30, 2013]

Testing and Initial Compliance Requirements

§ 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

If you own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions you are subject to the requirements of this section.

(a) You must conduct the initial performance test or other initial compliance demonstrations in Table 4 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).

(b) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must demonstrate initial compliance with either the proposed emission limitations or the promulgated emission limitations no later than February 10, 2005 or no later than 180 days after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(c) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, and you chose to comply with the proposed emission limitations when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emission limitations by December 13, 2007 or after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(d) An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (d)(1) through (5) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

(5) The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3605, Jan. 18, 2008]

§ 63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?

If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must conduct an initial performance test within 240 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions specified in Table 4 to this subpart, as appropriate.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions you are subject to the requirements of this section.

(a) You must conduct any initial performance test or other initial compliance demonstration according to Tables 4 and 5 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).

(b) An owner or operator is not required to conduct an initial performance test on a unit for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (b)(1) through (4) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

[75 FR 9676, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6615 When must I conduct subsequent performance tests?

If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of this subpart.

§ 63.6620 What performance tests and other procedures must I use?

(a) You must conduct each performance test in Tables 3 and 4 of this subpart that applies to you.

(b) Each performance test must be conducted according to the requirements that this subpart specifies in Table 4 to this subpart. If you own or operate a non-operational stationary RICE that is subject to performance testing, you do not need to start up the engine solely to conduct the performance test. Owners and operators of a non-operational engine can conduct the performance test when the engine is started up again. The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load for the stationary RICE listed in paragraphs (b)(1) through (4) of this section.

(1) Non-emergency 4SRB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(2) New non-emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP located at a major source of HAP emissions.

(3) New non-emergency 2SLB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(4) New non-emergency CI stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(c) [Reserved]

(d) You must conduct three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must last at least 1 hour, unless otherwise specified in this subpart.

(e)(1) You must use Equation 1 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \quad (Eq.\ 1)$$

Where:

C_i = concentration of carbon monoxide (CO), total hydrocarbons (THC), or formaldehyde at the control device inlet,

C_o = concentration of CO, THC, or formaldehyde at the control device outlet, and

R = percent reduction of CO, THC, or formaldehyde emissions.

(2) You must normalize the CO, THC, or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO_2). If pollutant concentrations are to be corrected to 15 percent oxygen and CO_2 concentration is measured in lieu of oxygen concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.

(i) Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_o = \frac{0.209\ F_d}{F_c} \quad (Eq.\ 2)$$

Where:

F_o = Fuel factor based on the ratio of oxygen volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is oxygen, percent/100.

F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm^3 /J (dscf/10^6 Btu).

F_c = Ratio of the volume of CO_2 produced to the gross calorific value of the fuel from Method 19, dsm^3 /J (dscf/10^6 Btu)

(ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent O_2 , as follows:

$$X_{CO2} = \frac{5.9}{F_o} \quad (Eq.\ 3)$$

Where:

X_{CO2} = CO_2 correction factor, percent.

5.9 = 20.9 percent O_2 —15 percent O_2 , the defined O_2 correction value, percent.

(iii) Calculate the CO, THC, and formaldehyde gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{adj} = C_d \frac{X_{CO2}}{\%CO_2} \quad (Eq.\ 4)$$

Where:

C_{adj} = Calculated concentration of CO, THC, or formaldehyde adjusted to 15 percent O_2.

C_d = Measured concentration of CO, THC, or formaldehyde, uncorrected.

X_{CO2} = CO_2 correction factor, percent.

$\%CO_2$ = Measured CO_2 concentration measured, dry basis, percent.

(f) If you comply with the emission limitation to reduce CO and you are not using an oxidation catalyst, if you comply with the emission limitation to reduce formaldehyde and you are not using NSCR, or if you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and you are not using an oxidation catalyst or NSCR, you must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. You must not conduct the initial performance test until after the petition has been approved by the Administrator.

(g) If you petition the Administrator for approval of operating limitations, your petition must include the information described in paragraphs (g)(1) through (5) of this section.

(1) Identification of the specific parameters you propose to use as operating limitations;

(2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters, and how limitations on these parameters will serve to limit HAP emissions;

(3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

(4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(h) If you petition the Administrator for approval of no operating limitations, your petition must include the information described in paragraphs (h)(1) through (7) of this section.

(1) Identification of the parameters associated with operation of the stationary RICE and any emission control device which could change intentionally (*e.g.,* operator adjustment, automatic controller adjustment, etc.) or unintentionally (*e.g.,* wear and tear, error, etc.) on a routine basis or over time;

(2) A discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions;

(3) For the parameters which could change in such a way as to increase HAP emissions, a discussion of whether establishing limitations on the parameters would serve to limit HAP emissions;

(4) For the parameters which could change in such a way as to increase HAP emissions, a discussion of how you could establish upper and/or lower values for the parameters which would establish limits on the parameters in operating limitations;

(5) For the parameters, a discussion identifying the methods you could use to measure them and the instruments you could use to monitor them, as well as the relative accuracy and precision of the methods and instruments;

(6) For the parameters, a discussion identifying the frequency and methods for recalibrating the instruments you could use to monitor them; and

(7) A discussion of why, from your point of view, it is infeasible or unreasonable to adopt the parameters as operating limitations.

(i) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9676, Mar. 3, 2010; 78 FR 6702, Jan. 30, 2013]

§ 63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?

(a) If you elect to install a CEMS as specified in Table 5 of this subpart, you must install, operate, and maintain a CEMS to monitor CO and either O_2 or CO_2 according to the requirements in paragraphs (a)(1) through (4) of this section. If you are meeting a requirement to reduce CO emissions, the CEMS must be installed at both the inlet and outlet of the control device. If you are meeting a requirement to limit the concentration of CO, the CEMS must be installed at the outlet of the control device.

(1) Each CEMS must be installed, operated, and maintained according to the applicable performance specifications of 40 CFR part 60, appendix B.

(2) You must conduct an initial performance evaluation and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in § 63.8 and according to the applicable performance specifications of 40 CFR part 60, appendix B as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.

(3) As specified in § 63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. You must have at least two data points, with each representing a different 15-minute period, to have a valid hour of data.

(4) The CEMS data must be reduced as specified in § 63.8(g)(2) and recorded in parts per million or parts per billion (as appropriate for the applicable limitation) at 15 percent oxygen or the equivalent CO_2 concentration.

(b) If you are required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of this subpart, you must install, operate, and maintain each CPMS according to the requirements in paragraphs (b)(1) through (6) of this section. For an affected source that is complying with the emission limitations and operating limitations on March 9, 2011, the requirements in paragraph (b) of this section are applicable September 6, 2011.

(1) You must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraphs (b)(1)(i) through (v) of this section and in § 63.8(d). As specified in § 63.8(f)(4), you may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (b)(1) through (5) of this section in your site-specific monitoring plan.

(i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;

(ii) Sampling interface (*e.g.,* thermocouple) location such that the monitoring system will provide representative measurements;

(iii) Equipment performance evaluations, system accuracy audits, or other audit procedures;

(iv) Ongoing operation and maintenance procedures in accordance with provisions in § 63.8(c)(1)(ii) and (c)(3); and

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in § 63.10(c), (e)(1), and (e)(2)(i).

(2) You must install, operate, and maintain each CPMS in continuous operation according to the procedures in your site-specific monitoring plan.

(3) The CPMS must collect data at least once every 15 minutes (see also § 63.6635).

(4) For a CPMS for measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger.

(5) You must conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in your site-specific monitoring plan at least annually.

(6) You must conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must monitor and record your fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which reasonably minimizes HAP emissions.

(d) If you are operating a new or reconstructed emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must install a non-resettable hour meter prior to the startup of the engine.

(e) If you own or operate any of the following stationary RICE, you must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:

(1) An existing stationary RICE with a site rating of less than 100 HP located at a major source of HAP emissions;

(2) An existing emergency or black start stationary RICE with a site rating of less than or equal to 500 HP located at a major source of HAP emissions;

(3) An existing emergency or black start stationary RICE located at an area source of HAP emissions;

(4) An existing non-emergency, non-black start stationary CI RICE with a site rating less than or equal to 300 HP located at an area source of HAP emissions;

(5) An existing non-emergency, non-black start 2SLB stationary RICE located at an area source of HAP emissions;

(6) An existing non-emergency, non-black start stationary RICE located at an area source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.

(7) An existing non-emergency, non-black start 4SLB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(8) An existing non-emergency, non-black start 4SRB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(9) An existing, non-emergency, non-black start 4SLB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year; and

(10) An existing, non-emergency, non-black start 4SRB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year.

(f) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed.

(g) If you own or operate an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, you must comply with either paragraph (g)(1) or paragraph (2) of this section. Owners and operators must follow the manufacturer's specified maintenance requirements for operating and maintaining the open or closed crankcase ventilation systems and replacing the crankcase filters, or can request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements. Existing CI engines located at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2) do not have to meet the requirements of this paragraph (g). Existing CI engines located on offshore vessels that meet § 63.6603(c) do not have to meet the requirements of this paragraph (g).

(1) Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or

(2) Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates and metals.

(h) If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.

(i) If you own or operate a stationary CI engine that is subject to the work, operation or management practices in items 1 or 2 of Table 2c to this subpart or in items 1 or 4 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

(j) If you own or operate a stationary SI engine that is subject to the work, operation or management practices in items 6, 7, or 8 of Table 2c to this subpart or in items 5, 6, 7, 9, or 11 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6703, Jan. 30, 2013]

§ 63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate initial compliance with each emission limitation, operating limitation, and other requirement that applies to you according to Table 5 of this subpart.

(b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you.

(c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.6645.

(d) Non-emergency 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more can demonstrate initial compliance with the formaldehyde emission limit by testing for THC instead of formaldehyde. The testing must be conducted according to the requirements in Table 4 of this subpart. The average reduction of emissions of THC determined from the performance test must be equal to or greater than 30 percent.

(e) The initial compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

(1) The compliance demonstration must consist of at least three test runs.

(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.

(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O_2 using one of the O_2 measurement methods specified in Table 4 of this subpart. Measurements to determine O_2 concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O_2 emissions simultaneously at the inlet and outlet of the control device.

[69 FR 33506, June 15, 2004, as amended at 78 FR 6704, Jan. 30, 2013]

Continuous Compliance Requirements

§ 63.6635 How do I monitor and collect data to demonstrate continuous compliance?

(a) If you must comply with emission and operating limitations, you must monitor and collect data according to this section.

(b) Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, you must monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.

[69 FR 33506, June 15, 2004, as amended at 76 FR 12867, Mar. 9, 2011]

§ 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you according to methods specified in Table 6 to this subpart.

(b) You must report each instance in which you did not meet each emission limitation or operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in § 63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE.

(c) The annual compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

(1) The compliance demonstration must consist of at least one test run.

(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.

(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O_2 using one of the O_2 measurement methods specified in Table 4 of this subpart. Measurements to determine O_2 concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O_2 emissions simultaneously at the inlet and outlet of the control device.

(7) If the results of the annual compliance demonstration show that the emissions exceed the levels specified in Table 6 of this subpart, the stationary RICE must be shut down as soon as safely possible, and appropriate corrective action must be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The stationary RICE must be retested within 7 days of being restarted and the emissions must meet the levels specified in Table 6 of this subpart. If the retest shows that the emissions continue to exceed the specified levels, the stationary RICE must again be shut down as soon as safely possible, and the stationary RICE may not operate, except for purposes of startup and testing, until the owner/operator demonstrates through testing that the emissions do not exceed the levels specified in Table 6 of this subpart.

(d) For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations that occur during the first 200 hours of operation from engine startup (engine burn-in period) are not violations. Rebuilt stationary RICE means a stationary RICE that has been rebuilt as that term is defined in 40 CFR 94.11(a).

(e) You must also report each instance in which you did not meet the requirements in Table 8 to this subpart that apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart, except for the initial notification requirements: a new or reconstructed stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new or reconstructed emergency stationary RICE, or a new or reconstructed limited use stationary RICE.

(f) If you own or operate an emergency stationary RICE, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1) through (4) of this section. In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (4) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (4) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary RICE in emergency situations.

(2) You may operate your emergency stationary RICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraphs (f)(3) and (4) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(ii) Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see § 63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(4) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraphs (f)(4)(i) and (ii) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system.

(ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6704, Jan. 30, 2013]

Notifications, Reports, and Records

§ 63.6645 What notifications must I submit and when?

(a) You must submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified if you own or operate any of the following;

(1) An existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

(2) An existing stationary RICE located at an area source of HAP emissions.

(3) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(4) A new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 HP located at a major source of HAP emissions.

(5) This requirement does not apply if you own or operate an existing stationary RICE less than 100 HP, an existing stationary emergency RICE, or an existing stationary RICE that is not subject to any numerical emission standards.

(b) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart, you must submit an Initial Notification not later than December 13, 2004.

(c) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions on or after August 16, 2004, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(d) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart and you are required to submit an initial notification, you must submit an Initial Notification not later than July 16, 2008.

(e) If you start up your new or reconstructed stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions on or after March 18, 2008 and you are required to submit an initial notification, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(f) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with § 63.6590(b), your notification should include the information in § 63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions).

(g) If you are required to conduct a performance test, you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in § 63.7(b)(1).

(h) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 5 to this subpart, you must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii).

(1) For each initial compliance demonstration required in Table 5 to this subpart that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration.

(2) For each initial compliance demonstration required in Table 5 to this subpart that includes a performance test conducted according to the requirements in Table 3 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to § 63.10(d)(2).

(i) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and subject to an enforceable state or local standard requiring engine replacement and you intend to meet management practices rather than emission limits, as specified in § 63.6603(d), you must submit a notification by March 3, 2013, stating that you intend to use the provision in § 63.6603(d) and identifying the state or local regulation that the engine is subject to.

[73 FR 3606, Jan. 18, 2008, as amended at 75 FR 9677, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6705, Jan. 30, 2013]

§ 63.6650 What reports must I submit and when?

(a) You must submit each report in Table 7 of this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report by the date in Table 7 of this subpart and according to the requirements in paragraphs (b)(1) through (b)(9) of this section.

(1) For semiannual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in § 63.6595.

(2) For semiannual Compliance reports, the first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in § 63.6595.

(3) For semiannual Compliance reports, each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) For semiannual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (b)(4) of this section.

(6) For annual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on December 31.

(7) For annual Compliance reports, the first Compliance report must be postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for your affected source in § 63.6595.

(8) For annual Compliance reports, each subsequent Compliance report must cover the annual reporting period from January 1 through December 31.

(9) For annual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than January 31.

(c) The Compliance report must contain the information in paragraphs (c)(1) through (6) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The

report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.6605(b), including actions taken to correct a malfunction.

(5) If there are no deviations from any emission or operating limitations that apply to you, a statement that there were no deviations from the emission or operating limitations during the reporting period.

(6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.

(d) For each deviation from an emission or operating limitation that occurs for a stationary RICE where you are not using a CMS to comply with the emission or operating limitations in this subpart, the Compliance report must contain the information in paragraphs (c)(1) through (4) of this section and the information in paragraphs (d)(1) and (2) of this section.

(1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(e) For each deviation from an emission or operating limitation occurring for a stationary RICE where you are using a CMS to comply with the emission and operating limitations in this subpart, you must include information in paragraphs (c)(1) through (4) and (e)(1) through (12) of this section.

(1) The date and time that each malfunction started and stopped.

(2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out-of-control, including the information in § 63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.

(8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.

(9) A brief description of the stationary RICE.

(10) A brief description of the CMS.

(11) The date of the latest CMS certification or audit.

(12) A description of any changes in CMS, processes, or controls since the last reporting period.

(f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

(g) If you are operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must submit an annual report according to Table 7 of this subpart by the date specified unless the Administrator has approved a different schedule, according to the information described in paragraphs (b)(1) through (b)(5) of this section. You must report the data specified in (g)(1) through (g)(3) of this section.

(1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.

(2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.

(3) Any problems or errors suspected with the meters.

(h) If you own or operate an emergency stationary RICE with a site rating of more than 100 brake HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in § 63.6640(f)(4)(ii), you must submit an annual report according to the requirements in paragraphs (h)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

(ii) Date of the report and beginning and ending dates of the reporting period.

(iii) Engine site rating and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in § 63.6640(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(vii) Hours spent for operation for the purpose specified in § 63.6640(f)(4)(ii), including the date, start time, and end time for engine operation for the purposes specified in § 63.6640(f)(4)(ii). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(viii) If there were no deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period.

(ix) If there were deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), information on the number, duration, and cause of deviations, and the corrective action taken.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in § 63.13.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9677, Mar. 3, 2010; 78 FR 6705, Jan. 30, 2013]

§ 63.6655 What records must I keep?

(a) If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(5), (b)(1) through (b)(3) and (c) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in § 63.10(b)(2)(xiv).

(2) Records of the occurrence and duration of each malfunction of operation (*i.e.,* process equipment) or the air pollution control and monitoring equipment.

(3) Records of performance tests and performance evaluations as required in § 63.10(b)(2)(viii).

(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.

(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(b) For each CEMS or CPMS, you must keep the records listed in paragraphs (b)(1) through (3) of this section.

(1) Records described in § 63.10(b)(2)(vi) through (xi).

(2) Previous (*i.e.,* superseded) versions of the performance evaluation plan as required in § 63.8(d)(3).

(3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in § 63.8(f)(6)(i), if applicable.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must keep the records of your daily fuel usage monitors.

(d) You must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies to you.

(e) You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate any of the following stationary RICE;

(1) An existing stationary RICE with a site rating of less than 100 brake HP located at a major source of HAP emissions.

(2) An existing stationary emergency RICE.

(3) An existing stationary RICE located at an area source of HAP emissions subject to management practices as shown in Table 2d to this subpart.

(f) If you own or operate any of the stationary RICE in paragraphs (f)(1) through (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in § 63.6640(f)(2)(ii) or (iii) or § 63.6640(f)(4)(ii), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

(1) An existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions that does not meet the standards applicable to non-emergency engines.

(2) An existing emergency stationary RICE located at an area source of HAP emissions that does not meet the standards applicable to non-emergency engines.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 78 FR 6706, Jan. 30, 2013]

§ 63.6660 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review according to § 63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1).

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010]

Other Requirements and Information

§ 63.6665 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with any of the requirements of the General Provisions specified in Table 8: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing stationary RICE that combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, an existing emergency stationary RICE, or an existing limited use stationary RICE. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in the General Provisions specified in Table 8 except for the initial notification requirements: A new stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new emergency stationary RICE, or a new limited use stationary RICE.

[75 FR 9678, Mar. 3, 2010]

§ 63.6670 Who implements and enforces this subpart?

(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out whether this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are:

(1) Approval of alternatives to the non-opacity emission limitations and operating limitations in § 63.6600 under § 63.6(g).

(2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.

(3) Approval of major alternatives to monitoring under § 63.8(f) and as defined in § 63.90.

(4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

(5) Approval of a performance test which was conducted prior to the effective date of the rule, as specified in § 63.6610(b).

§ 63.6675 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA); in 40 CFR 63.2, the General Provisions of this part; and in this section as follows:

Alaska Railbelt Grid means the service areas of the six regulated public utilities that extend from Fairbanks to Anchorage and the Kenai Peninsula. These utilities are Golden Valley Electric Association; Chugach Electric Association; Matanuska Electric Association; Homer Electric Association; Anchorage Municipal Light & Power; and the City of Seward Electric System.

Area source means any stationary source of HAP that is not a major source as defined in part 63.

Associated equipment as used in this subpart and as referred to in section 112(n)(4) of the CAA, means equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary RICE.

Backup power for renewable energy means an engine that provides backup power to a facility that generates electricity from renewable energy resources, as that term is defined in Alaska Statute 42.45.045(l)(5) (incorporated by reference, see § 63.14).

Black start engine means an engine whose only purpose is to start up a combustion turbine.

CAA means the Clean Air Act (42 U.S.C. 7401 *et seq.,* as amended by Public Law 101-549, 104 Stat. 2399).

Commercial emergency stationary RICE means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Custody transfer means the transfer of hydrocarbon liquids or natural gas: After processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of this subpart, the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation or operating limitation;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limitation or operating limitation in this subpart during malfunction, regardless or whether or not such failure is permitted by this subpart.

(4) Fails to satisfy the general duty to minimize emissions established by § 63.6(e)(1)(i).

Diesel engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2. Diesel fuel also includes any non-distillate fuel with comparable physical and chemical properties (*e.g.* biodiesel) that is suitable for use in compression ignition engines.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO_2 .

Dual-fuel engine means any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel.

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary RICE must comply with the requirements specified in § 63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in § 63.6640(f), then it is not considered to be an emergency stationary RICE under this subpart.

(1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.

(2) The stationary RICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 63.6640(f).

(3) The stationary RICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 63.6640(f)(2)(ii) or (iii) and § 63.6640(f)(4)(i) or (ii).

Engine startup means the time from initial start until applied load and engine and associated equipment reaches steady state or normal operation. For stationary engine with catalytic controls, engine startup means the time from initial start until applied load and engine and associated equipment, including the catalyst, reaches steady state or normal operation.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Gaseous fuel means a material used for combustion which is in the gaseous state at standard atmospheric temperature and pressure conditions.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Glycol dehydration unit means a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes “rich” glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The “lean” glycol is then recycled.

Hazardous air pollutants (HAP) means any air pollutants listed in or pursuant to section 112(b) of the CAA.

Institutional emergency stationary RICE means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

ISO standard day conditions means 288 degrees Kelvin (15 degrees Celsius), 60 percent relative humidity and 101.3 kilopascals pressure.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO_2 .

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Limited use stationary RICE means any stationary RICE that operates less than 100 hours per year.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining of natural gas production.

Liquid fuel means any fuel in liquid form at standard temperature and pressure, including but not limited to diesel, residual/crude oil, kerosene/naphtha (jet fuel), and gasoline.

Major Source, as used in this subpart, shall have the same meaning as in § 63.2, except that:

(1) Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in this section)) and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;

(2) For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated;

(3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and

(4) Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Non-selective catalytic reduction (NSCR) means an add-on catalytic nitrogen oxides (NO_x) control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO_x, CO, and volatile organic compounds (VOC) into CO_2, nitrogen, and water.

Oil and gas production facility as used in this subpart means any grouping of equipment where hydrocarbon liquids are processed, upgraded (*i.e.,* remove impurities or other constituents to meet contract specifications), or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For purposes of a major source determination, facility (including a building, structure, or installation) means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, power line or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants.

Oxidation catalyst means an add-on catalytic control device that controls CO and VOC by oxidation.

Peaking unit or engine means any standby engine intended for use during periods of high demand that are not emergencies.

Percent load means the fractional power of an engine compared to its maximum manufacturer's design capacity at engine site conditions. Percent load may range between 0 percent to above 100 percent.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. For oil and natural gas production facilities subject to subpart HH of this part, the potential to emit provisions in § 63.760(a) may be used. For natural gas transmission and storage facilities subject to subpart HHH of this part, the maximum annual facility gas throughput for storage facilities may be determined according to § 63.1270(a)(1) and the maximum annual throughput for transmission facilities may be determined according to § 63.1270(a)(2).

Production field facility means those oil and gas production facilities located prior to the point of custody transfer.

Production well means any hole drilled in the earth from which crude oil, condensate, or field natural gas is extracted.

Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C_3H_8.

Remote stationary RICE means stationary RICE meeting any of the following criteria:

(1) Stationary RICE located in an offshore area that is beyond the line of ordinary low water along that portion of the coast of the United States that is in direct contact with the open seas and beyond the line marking the seaward limit of inland waters.

(2) Stationary RICE located on a pipeline segment that meets both of the criteria in paragraphs (2)(i) and (ii) of this definition.

(i) A pipeline segment with 10 or fewer buildings intended for human occupancy and no buildings with four or more stories within 220 yards (200 meters) on either side of the centerline of any continuous 1-mile (1.6 kilometers) length of pipeline. Each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy.

(ii) The pipeline segment does not lie within 100 yards (91 meters) of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period. The days and weeks need not be consecutive. The building or area is considered occupied for a full day if it is occupied for any portion of the day.

(iii) For purposes of this paragraph (2), the term pipeline segment means all parts of those physical facilities through which gas moves in transportation, including but not limited to pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies. Stationary RICE located within 50 yards (46 meters) of the pipeline segment providing power for equipment on a pipeline segment are part of the pipeline segment. Transportation of gas means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

(3) Stationary RICE that are not located on gas pipelines and that have 5 or fewer buildings intended for human occupancy and no buildings with four or more stories within a 0.25 mile radius around the engine. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

Residential emergency stationary RICE means an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

Responsible official means responsible official as defined in 40 CFR 70.2.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to December 19, 2002 with passive emission control technology for NO_x (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Site-rated HP means the maximum manufacturer's design capacity at engine site conditions.

Spark ignition means relating to either: A gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary reciprocating internal combustion engine (RICE) means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Stationary RICE test cell/stand means an engine test cell/stand, as defined in subpart PPPPP of this part, that tests stationary RICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

Subpart means 40 CFR part 63, subpart ZZZZ.

Surface site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3607, Jan. 18, 2008; 75 FR 9679, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 76 FR 12867, Mar. 9, 2011; 78 FR 6706, Jan. 30, 2013]

Table 1 a **to Subpart ZZZZ of Part 63—Emission Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE > 500 HP Located at a Major Source of HAP Emissions**

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations at 100 percent load plus or minus 10 percent for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 4SRB stationary RICE	a. Reduce formaldehyde emissions by 76 percent or more. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may reduce formaldehyde emissions by 75 percent or more until June 15, 2007 or	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[1]
	b. Limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O_2	

[1]Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9679, Mar. 3, 2010, as amended at 75 FR 51592, Aug. 20, 2010]

Table 1 b **to Subpart ZZZZ of Part 63—Operating Limitations for Existing, New, and Reconstructed SI 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions**

As stated in §§ 63.6600, 63.6603, 63.6630 and 63.6640, you must comply with the following operating limitations for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and using NSCR; or existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent $O_2$and using NSCR;	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 750 °F and less than or equal to 1250 °F.[1]
2. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and not using NSCR; or	Comply with any operating limitations approved by the Administrator.
existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent $O_2$and not using NSCR.	

[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

[78 FR 6706, Jan. 30, 2013]

Table 2 a **to Subpart ZZZZ of Part 63—Emission Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions**

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary RICE at 100 percent load plus or minus 10 percent:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .

1. 2SLB stationary RICE	a. Reduce CO emissions by 58 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O_2. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may limit concentration of formaldehyde to 17 ppmvd or less at 15 percent O_2until June 15, 2007	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[1]
2. 4SLB stationary RICE	a. Reduce CO emissions by 93 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O_2	
3. CI stationary RICE	a. Reduce CO emissions by 70 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 580 ppbvd or less at 15 percent O_2	

[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9680, Mar. 3, 2010]

Table 2 b **to Subpart ZZZZ of Part 63—Operating Limitations for New and Reconstructed 2SLB and CI Stationary RICE >500 HP Located at a Major Source of HAP Emissions, New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions, Existing CI Stationary RICE >500 HP**

As stated in §§ 63.6600, 63.6601, 63.6603, 63.6630, and 63.6640, you must comply with the following operating limitations for new and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions; new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions; and existing CI stationary RICE >500 HP:

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and using an oxidation catalyst; and New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F.[1]

formaldehyde in the stationary RICE exhaust and using an oxidation catalyst.	
2. Existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and using an oxidation catalyst	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test; and
	b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F.[1]
3. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and not using an oxidation catalyst; and	Comply with any operating limitations approved by the Administrator.
New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and not using an oxidation catalyst; and	
existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and not using an oxidation catalyst.	

[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

[78 FR 6707, Jan. 30, 2013]

Table 2 c **to Subpart ZZZZ of Part 63—Requirements for Existing Compression Ignition Stationary RICE Located at a Major Source of HAP Emissions and Existing Spark Ignition Stationary RICE ≤500 HP Located at a Major Source of HAP Emissions**

As stated in §§ 63.6600, 63.6602, and 63.6640, you must comply with the following requirements for existing compression ignition stationary RICE located at a major source of HAP emissions and existing spark ignition stationary RICE ≤500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Emergency stationary CI RICE and black start stationary CI RICE [1]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first.[2]	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the

	b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.[3]	engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[3]
2. Non-Emergency, non-black start stationary CI RICE <100 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first.[2] b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.[3]	
3. Non-Emergency, non-black start CI stationary RICE 100≤HP≤300 HP	Limit concentration of CO in the stationary RICE exhaust to 230 ppmvd or less at 15 percent O_2.	
4. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd or less at 15 percent O_2; or b. Reduce CO emissions by 70 percent or more.	
5. Non-Emergency, non-black start stationary CI RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd or less at 15 percent O_2; or b. Reduce CO emissions by 70 percent or more.	
6. Emergency stationary SI RICE and black start stationary SI RICE.[1]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[2] b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually,	

	whichever comes first, and replace as necessary.[3]	
7. Non-Emergency, non-black start stationary SI RICE <100 HP that are not 2SLB stationary RICE	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[2] b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.[3]	
8. Non-Emergency, non-black start 2SLB stationary SI RICE <100 HP	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first;[2] b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary.[3]	
9. Non-emergency, non-black start 2SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 225 ppmvd or less at 15 percent O_2.	
10. Non-emergency, non-black start 4SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 47 ppmvd or less at 15 percent O_2.	
11. Non-emergency, non-black start 4SRB stationary RICE 100≤HP≤500	Limit concentration of formaldehyde in the stationary RICE exhaust to 10.3 ppmvd or less at 15 percent O_2.	
12. Non-emergency, non-black start stationary RICE 100≤HP≤500 which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Limit concentration of CO in the stationary RICE exhaust to 177 ppmvd or less at 15 percent O_2.	

[1] If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in Table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

[2] Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2c of this subpart.

[3] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[78 FR 6708, Jan. 30, 2013, as amended at 78 FR 14457, Mar. 6, 2013]

Table 2 d **to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions**

As stated in §§ 63.6603 and 63.6640, you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions:

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Non-Emergency, non-black start CI stationary RICE ≤300 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first;[1] b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.
2. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd at 15 percent O_2; or	
	b. Reduce CO emissions by 70 percent or more.	
3. Non-Emergency, non-black start CI	a. Limit concentration of	

stationary RICE >500 HP	CO in the stationary RICE exhaust to 23 ppmvd at 15 percent O_2; or	
	b. Reduce CO emissions by 70 percent or more.	
4. Emergency stationary CI RICE and black start stationary CI RICE.[2]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[1]	
	b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
5. Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE >500 HP that operate 24 hours or less per calendar year; non-emergency, non-black start 4SRB stationary RICE >500 HP that operate 24 hours or less per calendar year.[2]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[1]; b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
6. Non-emergency, non-black start 2SLB stationary RICE	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 4,320 hours	

	of operation or annually, whichever comes first, and replace as necessary.	
7. Non-emergency, non-black start 4SLB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
8. Non-emergency, non-black start 4SLB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
9. Non-emergency, non-black start 4SLB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install an oxidation catalyst to reduce HAP emissions from the stationary RICE.	
10. Non-emergency, non-black start 4SRB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as	

	necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
11. Non-emergency, non-black start 4SRB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
12. Non-emergency, non-black start 4SRB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install NSCR to reduce HAP emissions from the stationary RICE.	
13. Non-emergency, non-black start stationary RICE which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1] b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	

[1] Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2d of this subpart.

[2] If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose

an unacceptable risk under federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

[78 FR 6709, Jan. 30, 2013]

Table 3 to Subpart ZZZZ of Part 63—Subsequent Performance Tests

As stated in §§ 63.6615 and 63.6620, you must comply with the following subsequent performance test requirements:

For each . . .	Complying with the requirement to . . .	You must . . .
1. New or reconstructed 2SLB stationary RICE >500 HP located at major sources; new or reconstructed 4SLB stationary RICE ≥250 HP located at major sources; and new or reconstructed CI stationary RICE >500 HP located at major sources	Reduce CO emissions and not using a CEMS	Conduct subsequent performance tests semiannually.[1]
2. 4SRB stationary RICE ≥5,000 HP located at major sources	Reduce formaldehyde emissions	Conduct subsequent performance tests semiannually.[1]
3. Stationary RICE >500 HP located at major sources and new or reconstructed 4SLB stationary RICE 250≤HP≤500 located at major sources	Limit the concentration of formaldehyde in the stationary RICE exhaust	Conduct subsequent performance tests semiannually.[1]
4. Existing non-emergency, non-black start CI stationary RICE >500 HP that are not limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 3 years, whichever comes first.
5. Existing non-emergency, non-black start CI stationary RICE >500 HP that are limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 5 years, whichever comes first.

[1] After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

[78 FR 6711, Jan. 30, 2013]

Table 4 to Subpart ZZZZ of Part 63—Requirements for Performance Tests

As stated in §§ 63.6610, 63.6611, 63.6612, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE:

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
1. 2SLB, 4SLB, and CI stationary RICE	a. reduce CO emissions	i. Measure the O_2 at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005).[a c]	(a) Measurements to determine O_2 must be made at the same time as the measurements for CO concentration.
		ii. Measure the CO at the inlet and the outlet of the control device	(1) ASTM D6522-00 (Reapproved 2005) [a b c] or Method 10 of 40 CFR part 60, appendix A	(a) The CO concentration must be at 15 percent O_2, dry basis.
2. 4SRB stationary RICE	a. reduce formaldehyde emissions	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A § 63.7(d)(1)(i)	(a) sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2 at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005).[a]	(a) measurements to determine O_2 concentration must be made at the same time as the measurements for formaldehyde or THC concentration.
		iii. Measure moisture content at the inlet and outlet of the control device; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03.[a]	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration.
		iv. If demonstrating compliance with the formaldehyde percent reduction requirement, measure formaldehyde at the inlet and the outlet of the control device	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,[a] provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. If demonstrating compliance with the THC percent reduction requirement, measure THC at the inlet and the outlet of the control device	(1) Method 25A, reported as propane, of 40 CFR part 60, appendix A	(a) THC concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
3.	a. limit the	i. Select the sampling	(1) Method 1 or 1A of 40	(a) if using a control

Stationary RICE	concentration of formaldehyde or CO in the stationary RICE exhaust	port location and the number of traverse points; and	CFR part 60, appendix A § 63.7(d)(1)(i)	device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2concentration of the stationary RICE exhaust at the sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005).[a]	(a) measurements to determine O_2concentration must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iii. Measure moisture content of the stationary RICE exhaust at the sampling port location; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03.[a]	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iv. Measure formaldehyde at the exhaust of the stationary RICE; or	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,[a]provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) Formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. measure CO at the exhaust of the stationary RICE.	(1) Method 10 of 40 CFR part 60, appendix A, ASTM Method D6522-00 (2005),[a] [c]Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03.[a]	(a) CO concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

[a] Incorporated by reference, see 40 CFR 63.14. You may also obtain copies from University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

[b] You may also use Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03.

[c] ASTM-D6522-00 (2005) may be used to test both CI and SI stationary RICE.

[78 FR 6711, Jan. 30, 2013]

Table 5 to Subpart ZZZZ of Part 63—Initial Compliance With Emission Limitations, Operating Limitations, and Other Requirements

As stated in §§ 63.6612, 63.6625 and 63.6630, you must initially comply with the emission and operating limitations as required by the following:

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and using oxidation catalyst, and using a CPMS	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
2. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, using oxidation catalyst, and using a CPMS	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and not using oxidation catalyst	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.
4. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and not using oxidation catalyst	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and

		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
5. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O_2 or CO_2 at both the inlet and outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average reduction of CO calculated using § 63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average percent reduction achieved during the 4-hour period.
6. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O_2 or CO_2 at the outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and
		ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average concentration of CO calculated using § 63.6620 is less than or equal to the CO emission limitation. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average concentration measured during the 4-hour period.
7. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction, or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and

		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
8. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
9. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
10. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
11. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-	a. Reduce CO emissions	i. The average reduction of emissions of CO or formaldehyde, as applicable determined from the initial performance

emergency stationary CI RICE 300<HP≤500 located at an area source of HAP		test is equal to or greater than the required CO or formaldehyde, as applicable, percent reduction.
12. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300<HP≤500 located at an area source of HAP	a. Limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. The average formaldehyde or CO concentration, as applicable, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde or CO emission limitation, as applicable.
13. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O_2;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1350 °F.
14. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O_2, or the average reduction of emissions of THC is 30 percent or more;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1250 °F.

[78 FR 6712, Jan. 30, 2013]

Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance With Emission Limitations, and Other Requirements

As stated in § 63.6640, you must continuously comply with the emissions and operating limitations and work or management practices as required by the following:

For each . . .	**Complying with the**	**You must demonstrate continuous**

	requirement to . . .	compliance by . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved [a]; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
2. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved [a]; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, new or reconstructed non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using a CEMS	i. Collecting the monitoring data according to § 63.6625(a), reducing the measurements to 1-hour averages, calculating the percent reduction or concentration of CO emissions according to § 63.6620; and ii. Demonstrating that the catalyst achieves the required percent reduction of CO emissions over the 4-hour averaging period, or that the emission remain at or below the CO concentration limit; and
		iii. Conducting an annual RATA of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B, as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.

4. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		iv. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
5. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
6. Non-emergency 4SRB stationary RICE with a brake HP ≥5,000 located at a major source of HAP	a. Reduce formaldehyde emissions	Conducting semiannual performance tests for formaldehyde to demonstrate that the required formaldehyde percent reduction is achieved, or to demonstrate that the average reduction of emissions of THC determined from the performance test is equal to or greater than 30 percent.[a]
7. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit [a]; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across

		the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
8. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit [a]; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
9. Existing emergency and black start stationary RICE ≤500 HP located at a major source of HAP, existing non-emergency stationary RICE <100 HP located at a major source of HAP, existing emergency and black start stationary RICE located at an area source of HAP, existing non-emergency stationary CI RICE ≤300 HP located at an area source of HAP, existing non-emergency 2SLB stationary RICE located at an area source of HAP, existing non-emergency stationary SI RICE located at an area source of HAP which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, existing non-emergency 4SLB and 4SRB stationary RICE ≤500 HP located at an area source of HAP, existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that operate 24 hours or less per calendar year, and existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are remote stationary RICE	a. Work or Management practices	i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
10. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and using	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as

	oxidation catalyst	appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
11. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and not using oxidation catalyst	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
12. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and

		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
13. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and not using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
14. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. Conducting annual compliance demonstrations as specified in § 63.6640(c) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O_2; and either ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than 450 °F and less than or equal to 1350 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1350 °F.
15. Existing non-emergency 4SRB stationary RICE >500 HP located at an	a. Install NSCR	i. Conducting annual compliance demonstrations as specified in

area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year		§ 63.6640(c) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O_2, or the average reduction of emissions of THC is 30 percent or more; and either ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than or equal to 750 °F and less than or equal to 1250 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1250 °F.

[a] After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

[78 FR 6715, Jan. 30, 2013]

Table 7 to Subpart ZZZZ of Part 63—Requirements for Reports

As stated in § 63.6650, you must comply with the following requirements for reports:

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
1. Existing non-emergency, non-black start stationary RICE 100≤HP≤500 located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >500 HP located at a major source of HAP; existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >300 HP located at an area source of HAP; new or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP; and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	Compliance report	a. If there are no deviations from any emission limitations or operating limitations that apply to you, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were not periods during which the CMS was out-of-control during the reporting period; or	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5) for engines that are not limited use stationary RICE subject to numerical emission limitations; and ii. Annually according to the requirements in § 63.6650(b)(6)-(9) for engines that are limited use stationary RICE subject to numerical emission limitations.

		b. If you had a deviation from any emission limitation or operating limitation during the reporting period, the information in § 63.6650(d). If there were periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), the information in § 63.6650(e); or	i. Semiannually according to the requirements in § 63.6650(b).
		c. If you had a malfunction during the reporting period, the information in § 63.6650(c)(4).	i. Semiannually according to the requirements in § 63.6650(b).
2. New or reconstructed non-emergency stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Report	a. The fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas or digester gas, is equivalent to 10 percent or more of the gross heat input on an annual basis; and	i. Annually, according to the requirements in § 63.6650.
		b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and	i. See item 2.a.i.
		c. Any problems or errors suspected with the meters.	i. See item 2.a.i.
3. Existing non-emergency, non-black start 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Compliance report	a. The results of the annual compliance demonstration, if conducted during the reporting period.	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5).
4. Emergency stationary RICE that operate or are contractually obligated to be available for more than 15 hours per year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operate for the purposes specified in § 63.6640(f)(4)(ii)	Report	a. The information in § 63.6650(h)(1)	i. annually according to the requirements in § 63.6650(h)(2)-(3).

[78 FR 6719, Jan. 30, 2013]

Table 8 to Subpart ZZZZ of Part 63—Applicability of General Provisions to Subpart ZZZZ.

As stated in § 63.6665, you must comply with the following applicable general provisions.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.1	General applicability of the General Provisions	Yes.	
§ 63.2	Definitions	Yes	Additional terms defined in § 63.6675.
§ 63.3	Units and abbreviations	Yes.	
§ 63.4	Prohibited activities and circumvention	Yes.	
§ 63.5	Construction and reconstruction	Yes.	
§ 63.6(a)	Applicability	Yes.	
§ 63.6(b)(1)-(4)	Compliance dates for new and reconstructed sources	Yes.	
§ 63.6(b)(5)	Notification	Yes.	
§ 63.6(b)(6)	[Reserved]		
§ 63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes.	
§ 63.6(c)(1)-(2)	Compliance dates for existing sources	Yes.	
§ 63.6(c)(3)-(4)	[Reserved]		
§ 63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes.	
§ 63.6(d)	[Reserved]		
§ 63.6(e)	Operation and maintenance	No.	
§ 63.6(f)(1)	Applicability of standards	No.	
§ 63.6(f)(2)	Methods for determining compliance	Yes.	
§ 63.6(f)(3)	Finding of compliance	Yes.	
§ 63.6(g)(1)-(3)	Use of alternate standard	Yes.	
§ 63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§ 63.6(i)	Compliance extension procedures and criteria	Yes.	
§ 63.6(j)	Presidential compliance exemption	Yes.	
§ 63.7(a)(1)-(2)	Performance test dates	Yes	Subpart ZZZZ contains

			performance test dates at §§ 63.6610, 63.6611, and 63.6612.
§ 63.7(a)(3)	CAA section 114 authority	Yes.	
§ 63.7(b)(1)	Notification of performance test	Yes	Except that § 63.7(b)(1) only applies as specified in § 63.6645.
§ 63.7(b)(2)	Notification of rescheduling	Yes	Except that § 63.7(b)(2) only applies as specified in § 63.6645.
§ 63.7(c)	Quality assurance/test plan	Yes	Except that § 63.7(c) only applies as specified in § 63.6645.
§ 63.7(d)	Testing facilities	Yes.	
§ 63.7(e)(1)	Conditions for conducting performance tests	No.	Subpart ZZZZ specifies conditions for conducting performance tests at § 63.6620.
§ 63.7(e)(2)	Conduct of performance tests and reduction of data	Yes	Subpart ZZZZ specifies test methods at § 63.6620.
§ 63.7(e)(3)	Test run duration	Yes.	
§ 63.7(e)(4)	Administrator may require other testing under section 114 of the CAA	Yes.	
§ 63.7(f)	Alternative test method provisions	Yes.	
§ 63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes.	
§ 63.7(h)	Waiver of tests	Yes.	
§ 63.8(a)(1)	Applicability of monitoring requirements	Yes	Subpart ZZZZ contains specific requirements for monitoring at § 63.6625.
§ 63.8(a)(2)	Performance specifications	Yes.	
§ 63.8(a)(3)	[Reserved]		
§ 63.8(a)(4)	Monitoring for control devices	No.	
§ 63.8(b)(1)	Monitoring	Yes.	
§ 63.8(b)(2)-(3)	Multiple effluents and multiple monitoring systems	Yes.	
§ 63.8(c)(1)	Monitoring system operation and maintenance	Yes.	
§ 63.8(c)(1)(i)	Routine and predictable SSM	No	
§ 63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes.	
§ 63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	No	

§ 63.8(c)(2)-(3)	Monitoring system installation	Yes.	
§ 63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§ 63.8(c)(5)	COMS minimum procedures	No	Subpart ZZZZ does not require COMS.
§ 63.8(c)(6)-(8)	CMS requirements	Yes	Except that subpart ZZZZ does not require COMS.
§ 63.8(d)	CMS quality control	Yes.	
§ 63.8(e)	CMS performance evaluation	Yes	Except for § 63.8(e)(5)(ii), which applies to COMS.
		Except that § 63.8(e) only applies as specified in § 63.6645.	
§ 63.8(f)(1)-(5)	Alternative monitoring method	Yes	Except that § 63.8(f)(4) only applies as specified in § 63.6645.
§ 63.8(f)(6)	Alternative to relative accuracy test	Yes	Except that § 63.8(f)(6) only applies as specified in § 63.6645.
§ 63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§ 63.6635 and 63.6640.
§ 63.9(a)	Applicability and State delegation of notification requirements	Yes.	
§ 63.9(b)(1)-(5)	Initial notifications	Yes	Except that § 63.9(b)(3) is reserved.
		Except that § 63.9(b) only applies as specified in § 63.6645.	
§ 63.9(c)	Request for compliance extension	Yes	Except that § 63.9(c) only applies as specified in § 63.6645.
§ 63.9(d)	Notification of special compliance requirements for new sources	Yes	Except that § 63.9(d) only applies as specified in § 63.6645.
§ 63.9(e)	Notification of performance test	Yes	Except that § 63.9(e) only applies as specified in § 63.6645.
§ 63.9(f)	Notification of visible emission (VE)/opacity test	No	Subpart ZZZZ does not contain opacity or VE standards.

§ 63.9(g)(1)	Notification of performance evaluation	Yes	Except that § 63.9(g) only applies as specified in § 63.6645.
§ 63.9(g)(2)	Notification of use of COMS data	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes	If alternative is in use.
		Except that § 63.9(g) only applies as specified in § 63.6645.	
§ 63.9(h)(1)-(6)	Notification of compliance status	Yes	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. § 63.9(h)(4) is reserved.
			Except that § 63.9(h) only applies as specified in § 63.6645.
§ 63.9(i)	Adjustment of submittal deadlines	Yes.	
§ 63.9(j)	Change in previous information	Yes.	
§ 63.10(a)	Administrative provisions for recordkeeping/reporting	Yes.	
§ 63.10(b)(1)	Record retention	Yes	Except that the most recent 2 years of data do not have to be retained on site.
§ 63.10(b)(2)(i)-(v)	Records related to SSM	No.	
§ 63.10(b)(2)(vi)-(xi)	Records	Yes.	
§ 63.10(b)(2)(xii)	Record when under waiver	Yes.	
§ 63.10(b)(2)(xiii)	Records when using alternative to RATA	Yes	For CO standard if using RATA alternative.
§ 63.10(b)(2)(xiv)	Records of supporting documentation	Yes.	
§ 63.10(b)(3)	Records of applicability determination	Yes.	
§ 63.10(c)	Additional records for sources using CEMS	Yes	Except that § 63.10(c)(2)-(4) and (9) are reserved.
§ 63.10(d)(1)	General reporting requirements	Yes.	
§ 63.10(d)(2)	Report of performance test results	Yes.	
§ 63.10(d)(3)	Reporting opacity or VE observations	No	Subpart ZZZZ does not contain opacity or VE standards.

§ 63.10(d)(4)	Progress reports	Yes.	
§ 63.10(d)(5)	Startup, shutdown, and malfunction reports	No.	
§ 63.10(e)(1) and (2)(i)	Additional CMS Reports	Yes.	
§ 63.10(e)(2)(ii)	COMS-related report	No	Subpart ZZZZ does not require COMS.
§ 63.10(e)(3)	Excess emission and parameter exceedances reports	Yes.	Except that § 63.10(e)(3)(i) (C) is reserved.
§ 63.10(e)(4)	Reporting COMS data	No	Subpart ZZZZ does not require COMS.
§ 63.10(f)	Waiver for recordkeeping/reporting	Yes.	
§ 63.11	Flares	No.	
§ 63.12	State authority and delegations	Yes.	
§ 63.13	Addresses	Yes.	
§ 63.14	Incorporation by reference	Yes.	
§ 63.15	Availability of information	Yes.	

[75 FR 9688, Mar. 3, 2010, as amended at 78 FR 6720, Jan. 30, 2013]

Appendix A—Protocol for Using an Electrochemical Analyzer to Determine Oxygen and Carbon Monoxide Concentrations From Certain Engines

1.0 SCOPE AND APPLICATION. WHAT IS THIS PROTOCOL?

This protocol is a procedure for using portable electrochemical (EC) cells for measuring carbon monoxide (CO) and oxygen (O_2) concentrations in controlled and uncontrolled emissions from existing stationary 4-stroke lean burn and 4-stroke rich burn reciprocating internal combustion engines as specified in the applicable rule.

1.1 Analytes. What does this protocol determine?

This protocol measures the engine exhaust gas concentrations of carbon monoxide (CO) and oxygen (O_2).

Analyte	CAS No.	Sensitivity
Carbon monoxide (CO)	630-08-0	Minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.
Oxygen (O_2)	*7782-44-7*	

1.2 Applicability. When is this protocol acceptable?

This protocol is applicable to 40 CFR part 63, subpart ZZZZ. Because of inherent cross sensitivities of EC cells, you must not apply this protocol to other emissions sources without specific instruction to that effect.

1.3 Data Quality Objectives. How good must my collected data be?

Refer to Section 13 to verify and document acceptable analyzer performance.

1.4 Range. What is the targeted analytical range for this protocol?

The measurement system and EC cell design(s) conforming to this protocol will determine the analytical range for each gas component. The nominal ranges are defined by choosing up-scale calibration gas concentrations near the maximum anticipated flue gas concentrations for CO and O_2 , or no more than twice the permitted CO level.

1.5 Sensitivity. What minimum detectable limit will this protocol yield for a particular gas component?

The minimum detectable limit depends on the nominal range and resolution of the specific EC cell used, and the signal to noise ratio of the measurement system. The minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.

2.0 SUMMARY OF PROTOCOL

In this protocol, a gas sample is extracted from an engine exhaust system and then conveyed to a portable EC analyzer for measurement of CO and O_2 gas concentrations. This method provides measurement system performance specifications and sampling protocols to ensure reliable data. You may use additions to, or modifications of vendor supplied measurement systems (e.g., heated or unheated sample lines, thermocouples, flow meters, selective gas scrubbers, etc.) to meet the design specifications of this protocol. Do not make changes to the measurement system from the as-verified configuration (Section 3.12).

3.0 DEFINITIONS

3.1 Measurement System. The total equipment required for the measurement of CO and O_2 concentrations. The measurement system consists of the following major subsystems:

3.1.1 Data Recorder. A strip chart recorder, computer or digital recorder for logging measurement data from the analyzer output. You may record measurement data from the digital data display manually or electronically.

3.1.2 Electrochemical (EC) Cell. A device, similar to a fuel cell, used to sense the presence of a specific analyte and generate an electrical current output proportional to the analyte concentration.

3.1.3 Interference Gas Scrubber. A device used to remove or neutralize chemical compounds that may interfere with the selective operation of an EC cell.

3.1.4 Moisture Removal System. Any device used to reduce the concentration of moisture in the sample stream so as to protect the EC cells from the damaging effects of condensation and to minimize errors in measurements caused by the scrubbing of soluble gases.

3.1.5 Sample Interface. The portion of the system used for one or more of the following: sample acquisition; sample transport; sample conditioning or protection of the EC cell from any degrading effects of the engine exhaust effluent; removal of particulate matter and condensed moisture.

3.2 Nominal Range. The range of analyte concentrations over which each EC cell is operated (normally 25 percent to 150 percent of up-scale calibration gas value). Several nominal ranges can be used for any given cell so long as the calibration and repeatability checks for that range remain within specifications.

3.3 Calibration Gas. A vendor certified concentration of a specific analyte in an appropriate balance gas.

3.4 Zero Calibration Error. The analyte concentration output exhibited by the EC cell in response to zero-level calibration gas.

3.5 Up-Scale Calibration Error. The mean of the difference between the analyte concentration exhibited by the EC cell and the certified concentration of the up-scale calibration gas.

3.6 Interference Check. A procedure for quantifying analytical interference from components in the engine exhaust gas other than the targeted analytes.

3.7 Repeatability Check. A protocol for demonstrating that an EC cell operated over a given nominal analyte concentration range provides a stable and consistent response and is not significantly affected by repeated exposure to that gas.

3.8 Sample Flow Rate. The flow rate of the gas sample as it passes through the EC cell. In some situations, EC cells can experience drift with changes in flow rate. The flow rate must be monitored and documented during all phases of a sampling run.

3.9 Sampling Run. A timed three-phase event whereby an EC cell's response rises and plateaus in a sample conditioning phase, remains relatively constant during a measurement data phase, then declines during a refresh phase. The sample conditioning phase exposes the EC cell to the gas sample for a length of time sufficient to reach a constant response. The measurement data phase is the time interval during which gas sample measurements can be made that meet the acceptance criteria of this protocol. The refresh phase then purges the EC cells with CO-free air. The refresh phase replenishes requisite O_2 and moisture in the electrolyte reserve and provides a mechanism to de-gas or desorb any interference gas scrubbers or filters so as to enable a stable CO EC cell response. There are four primary types of sampling runs: pre- sampling calibrations; stack gas sampling; post-sampling calibration checks; and measurement system repeatability checks. Stack gas sampling runs can be chained together for extended evaluations, providing all other procedural specifications are met.

3.10 Sampling Day. A time not to exceed twelve hours from the time of the pre-sampling calibration to the post-sampling calibration check. During this time, stack gas sampling runs can be repeated without repeated recalibrations, providing all other sampling specifications have been met.

3.11 Pre-Sampling Calibration/Post-Sampling Calibration Check. The protocols executed at the beginning and end of each sampling day to bracket measurement readings with controlled performance checks.

3.12 Performance-Established Configuration. The EC cell and sampling system configuration that existed at the time that it initially met the performance requirements of this protocol.

4.0 INTERFERENCES.

When present in sufficient concentrations, NO and NO_2 are two gas species that have been reported to interfere with CO concentration measurements. In the likelihood of this occurrence, it is the protocol user's responsibility to employ and properly maintain an appropriate CO EC cell filter or scrubber for removal of these gases, as described in Section 6.2.12.

5.0 SAFETY. [RESERVED]

6.0 EQUIPMENT AND SUPPLIES.

6.1 What equipment do I need for the measurement system?

The system must maintain the gas sample at conditions that will prevent moisture condensation in the sample transport lines, both before and as the sample gas contacts the EC cells. The essential components of the measurement system are described below.

6.2 Measurement System Components.

6.2.1 Sample Probe. A single extraction-point probe constructed of glass, stainless steel or other non-reactive material, and of length sufficient to reach any designated sampling point. The sample probe must be designed to prevent plugging due to condensation or particulate matter.

6.2.2 Sample Line. Non-reactive tubing to transport the effluent from the sample probe to the EC cell.

6.2.3 Calibration Assembly (optional). A three-way valve assembly or equivalent to introduce calibration gases at ambient pressure at the exit end of the sample probe during calibration checks. The assembly must be designed such that only stack gas or calibration gas flows in the sample line and all gases flow through any gas path filters.

6.2.4 Particulate Filter (optional). Filters before the inlet of the EC cell to prevent accumulation of particulate material in the measurement system and extend the useful life of the components. All filters must be fabricated of materials that are non-reactive to the gas mixtures being sampled.

6.2.5 Sample Pump. A leak-free pump to provide undiluted sample gas to the system at a flow rate sufficient to minimize the response time of the measurement system. If located upstream of the EC cells, the pump must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.8 Sample Flow Rate Monitoring. An adjustable rotameter or equivalent device used to adjust and maintain the sample flow rate through the analyzer as prescribed.

6.2.9 Sample Gas Manifold (optional). A manifold to divert a portion of the sample gas stream to the analyzer and the remainder to a by-pass discharge vent. The sample gas manifold may also include provisions for introducing calibration gases directly to the analyzer. The manifold must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.10 EC cell. A device containing one or more EC cells to determine the CO and O_2 concentrations in the sample gas stream. The EC cell(s) must meet the applicable performance specifications of Section 13 of this protocol.

6.2.11 Data Recorder. A strip chart recorder, computer or digital recorder to make a record of analyzer output data. The data recorder resolution (i.e., readability) must be no greater than 1 ppm for CO; 0.1 percent for O_2 ; and one degree (either °C or °F) for temperature. Alternatively, you may use a digital or analog meter having the same resolution to observe and manually record the analyzer responses.

6.2.12 Interference Gas Filter or Scrubber. A device to remove interfering compounds upstream of the CO EC cell. Specific interference gas filters or scrubbers used in the performance-established configuration of the analyzer must continue to be used. Such a filter or scrubber must have a means to determine when the removal agent is exhausted. Periodically replace or replenish it in accordance with the manufacturer's recommendations.

7.0 REAGENTS AND STANDARDS. WHAT CALIBRATION GASES ARE NEEDED?

7.1 Calibration Gases. CO calibration gases for the EC cell must be CO in nitrogen or CO in a mixture of nitrogen and O_2. Use CO calibration gases with labeled concentration values certified by the manufacturer to be within ± 5 percent of the label value. Dry ambient air (20.9 percent O_2) is acceptable for calibration of the O_2 cell. If needed, any lower percentage O_2 calibration gas must be a mixture of O_2 in nitrogen.

7.1.1 Up-Scale CO Calibration Gas Concentration. Choose one or more up-scale gas concentrations such that the average of the stack gas measurements for each stack gas sampling run are between 25 and 150 percent of those concentrations. Alternatively, choose an up-scale gas that does not exceed twice the concentration of the applicable outlet standard. If a measured gas value exceeds 150 percent of the up-scale CO calibration gas value at any time during the stack gas sampling run, the run must be discarded and repeated.

7.1.2 Up-Scale O_2 Calibration Gas Concentration.

Select an O_2 gas concentration such that the difference between the gas concentration and the average stack gas measurement or reading for each sample run is less than 15 percent O_2 . When the average exhaust gas O_2 readings are above 6 percent, you may use dry ambient air (20.9 percent O_2) for the up-scale O_2 calibration gas.

7.1.3 Zero Gas. Use an inert gas that contains less than 0.25 percent of the up-scale CO calibration gas concentration. You may use dry air that is free from ambient CO and other combustion gas products (e.g., CO_2).

8.0 SAMPLE COLLECTION AND ANALYSIS

8.1 Selection of Sampling Sites.

8.1.1 Control Device Inlet. Select a sampling site sufficiently downstream of the engine so that the combustion gases should be well mixed. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.1.2 Exhaust Gas Outlet. Select a sampling site located at least two stack diameters downstream of any disturbance (e.g., turbocharger exhaust, crossover junction or recirculation take-off) and at least one-half stack diameter upstream of the gas discharge to the atmosphere. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.2 Stack Gas Collection and Analysis. Prior to the first stack gas sampling run, conduct that the pre-sampling calibration in accordance with Section 10.1. Use Figure 1 to record all data. Zero the analyzer with zero gas. Confirm and record that the scrubber media color is correct and not exhausted. Then position the probe at the sampling point and begin the sampling run at the same flow rate used during the up-scale calibration. Record the start time. Record all EC cell output responses and the flow rate during the “sample conditioning phase” once per minute until constant readings are obtained. Then begin the “measurement data phase” and record readings every 15 seconds for at least two minutes (or eight readings), or as otherwise required to achieve two continuous minutes of data that meet the specification given in Section 13.1. Finally, perform the “refresh phase” by introducing dry air, free from CO and other combustion gases, until several minute-to-minute readings of consistent value have been obtained. For each run use the “measurement data phase” readings to calculate the average stack gas CO and O_2 concentrations.

8.3 EC Cell Rate. Maintain the EC cell sample flow rate so that it does not vary by more than ± 10 percent throughout the pre-sampling calibration, stack gas sampling and post-sampling calibration check. Alternatively, the EC cell sample flow rate can be maintained within a tolerance range that does not affect the gas concentration readings by more than ± 3 percent, as instructed by the EC cell manufacturer.

9.0 QUALITY CONTROL (RESERVED)

10.0 CALIBRATION AND STANDARDIZATION

10.1 Pre-Sampling Calibration. Conduct the following protocol once for each nominal range to be used on each EC cell before performing a stack gas sampling run on each field sampling day. Repeat the calibration if you replace an EC cell before completing all of the sampling runs. There is no prescribed order for calibration of the EC cells; however, each cell must complete the measurement data phase during calibration. Assemble the measurement system by following the manufacturer's recommended protocols including for preparing and preconditioning the EC cell. Assure the measurement system has no leaks and verify the gas scrubbing agent is not depleted. Use Figure 1 to record all data.

10.1.1 Zero Calibration. For both the O_2 and CO cells, introduce zero gas to the measurement system (e.g., at the calibration assembly) and record the concentration reading every minute until readings are constant for at least two consecutive minutes. Include the time and sample flow rate. Repeat the steps in this section at least once to verify the zero calibration for each component gas.

10.1.2 Zero Calibration Tolerance. For each zero gas introduction, the zero level output must be less than or equal to ± 3 percent of the up-scale gas value or ± 1 ppm, whichever is less restrictive, for the CO channel and less than or equal to ± 0.3 percent O_2 for the O_2 channel.

10.1.3 Up-Scale Calibration. Individually introduce each calibration gas to the measurement system (e.g., at the calibration assembly) and record the start time. Record all EC cell output responses and the flow rate during this “sample conditioning phase” once per minute until readings are constant for at least two minutes. Then begin the “measurement data phase” and record readings every 15 seconds for a total of two minutes, or as otherwise required. Finally, perform the “refresh phase” by introducing dry air, free from CO and other combustion gases, until readings are constant for at least two consecutive minutes. Then repeat the steps in this section at least once to verify the calibration for each component gas. Introduce all gases to flow through the entire sample handling system (i.e., at the exit end of the sampling probe or the calibration assembly).

10.1.4 Up-Scale Calibration Error. The mean of the difference of the “measurement data phase” readings from the reported standard gas value must be less than or equal to ± 5 percent or ± 1 ppm for CO or ± 0.5 percent O_2 , whichever is less restrictive, respectively. The maximum allowable deviation from the mean measured value of any single “measurement data phase” reading must be less than or equal to ± 2 percent or ± 1 ppm for CO or ± 0.5 percent O_2 , whichever is less restrictive, respectively.

10.2 Post-Sampling Calibration Check. Conduct a stack gas post-sampling calibration check after the stack gas sampling run or set of runs and within 12 hours of the initial calibration. Conduct up-scale and zero calibration checks using the protocol in Section 10.1. Make no changes to the sampling system or EC cell calibration until all post-sampling calibration checks have been recorded. If either the zero or up-scale calibration error exceeds the respective specification in Sections 10.1.2 and 10.1.4 then all measurement data collected since the previous successful calibrations are invalid and re-calibration and re-sampling are required. If the sampling system is disassembled or the EC cell calibration is adjusted, repeat the calibration check before conducting the next analyzer sampling run.

11.0 Analytical Procedure

The analytical procedure is fully discussed in Section 8.

12.0 Calculations and Data Analysis

Determine the CO and O_2 concentrations for each stack gas sampling run by calculating the mean gas concentrations of the data recorded during the "measurement data phase".

13.0 Protocol Performance

Use the following protocols to verify consistent analyzer performance during each field sampling day.

13.1 Measurement Data Phase Performance Check. Calculate the mean of the readings from the "measurement data phase". The maximum allowable deviation from the mean for each of the individual readings is ± 2 percent, or ± 1 ppm, whichever is less restrictive. Record the mean value and maximum deviation for each gas monitored. Data must conform to Section 10.1.4. The EC cell flow rate must conform to the specification in Section 8.3.

Example: A measurement data phase is invalid if the maximum deviation of any single reading comprising that mean is greater than ± 2 percent *or ± 1 ppm (the default criteria). For example, if the mean = 30 ppm, single readings of below 29 ppm and above 31 ppm are disallowed*).

13.2 Interference Check. Before the initial use of the EC cell and interference gas scrubber in the field, and semi-annually thereafter, challenge the interference gas scrubber with NO and NO_2 gas standards that are generally recognized as representative of diesel-fueled engine NO and NO_2 emission values. Record the responses displayed by the CO EC cell and other pertinent data on Figure 1 or a similar form.

13.2.1 Interference Response. The combined NO and NO_2 interference response should be less than or equal to ± 5 percent of the up-scale CO calibration gas concentration.

13.3 Repeatability Check. Conduct the following check once for each nominal range that is to be used on the CO EC cell within 5 days prior to each field sampling program. If a field sampling program lasts longer than 5 days, repeat this check every 5 days. Immediately repeat the check if the EC cell is replaced or if the EC cell is exposed to gas concentrations greater than 150 percent of the highest up-scale gas concentration.

13.3.1 Repeatability Check Procedure. Perform a complete EC cell sampling run (all three phases) by introducing the CO calibration gas to the measurement system and record the response. Follow Section 10.1.3. Use Figure 1 to record all data. Repeat the run three times for a total of four complete runs. During the four repeatability check runs, do not adjust the system except where necessary to achieve the correct calibration gas flow rate at the analyzer.

13.3.2 Repeatability Check Calculations. Determine the highest and lowest average "measurement data phase" CO concentrations from the four repeatability check runs and record the results on Figure 1 or a similar form. The absolute value of the difference between the maximum and minimum average values recorded must not vary more than ± 3 percent or ± 1 ppm of the up-scale gas value, whichever is less restrictive.

14.0 POLLUTION PREVENTION (RESERVED)

15.0 WASTE MANAGEMENT (RESERVED)

16.0 ALTERNATIVE PROCEDURES (RESERVED)

17.0 REFERENCES

(1) “Development of an Electrochemical Cell Emission Analyzer Test Protocol”, Topical Report, Phil Juneau, Emission Monitoring, Inc., July 1997.

(2) “Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers, and Process Heaters Using Portable Analyzers”, EMC Conditional Test Protocol 30 (CTM-30), Gas Research Institute Protocol GRI-96/0008, Revision 7, October 13, 1997.

(3) “ICAC Test Protocol for Periodic Monitoring”, EMC Conditional Test Protocol 34 (CTM-034), The Institute of Clean Air Companies, September 8, 1999.

(4) “Code of Federal Regulations”, Protection of Environment, 40 CFR, Part 60, Appendix A, Methods 1-4; 10.

TABLE 1: APPENDIX A—SAMPLING RUN DATA.

Facility___________ Engine I.D.___________ Date______											
Run Type:	(_)			(_)				(_)		(_)	
(X)	Pre-Sample Calibration			Stack Gas Sample				Post-Sample Cal. Check		Repeatability Check	
Run #	1	1	2	2	3	3	4	4	Time	Scrub. OK	Flow- Rate
Gas	O_2	CO	O_2	CO	O_2	CO	O_2	CO			
Sample Cond. Phase											
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Measurement Data Phase											
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Mean											
Refresh Phase											
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[78 FR 6721, Jan. 30, 2013]

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document (ATSD) for a Prevention of Significant Deterioration (PSD) Flexible Permit and Part 70 Operating Permit Renewal

Source Background and Description

Source Name:	**Evonik Corporation Tippecanoe Laboratories**
Source Location:	**1650 Lilly Road, Lafayette, IN 47909**
County:	**Tippecanoe**
SIC Code:	**2833, 2834, 2879, and 2869**
Operation Permit No.:	**T157-33448-00006**
Permit Reviewer:	**Deena Patton**

On August 2, 2014, the Office of Air Quality (OAQ) had a notice published in the Journal and Courier, Lafayette, Indiana, stating that Evonik Corporation Tippecanoe Laboratories had applied for a Prevention of Significant Deterioration (PSD) Flexible Permit and Part 70 Operating Permit Renewal to continue operation of the pharmaceutical manufacturing plant and animal health products. The notice also stated that the OAQ proposed to issue a Prevention of Significant Deterioration (PSD) Flexible Permit and Part 70 Operating Permit Renewal for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

No comments were received during the public notice period.

Additional Changes

IDEM, OAQ has decided to make additional revisions to the permit as described below, with deleted language as ~~strikeouts~~ and new language **bolded**.

[Change 1] D.3.2 (b) states that 326 IAC 8-1-6 is not applicable because the PTE of VOC is less than 250 tons per year. The 250 should be twenty-five (25). 250 first appeared in the last renewal. However, the TSD for both the last renewal and the renewal currently on PN both state that 326 IAC 8-1-6 is not applicable to the units in question due to the PTE of VOC being less than twenty-five (25) tpy from each process.

D.3.2 Non-Applicability Determination of State VOC Emission Standards [326 IAC 8-5-3, 326 IAC 8-1-6]

(a) The emission units associated with the fermentation operations do not manufacture pharmaceutical products by chemical synthesis. Therefore, the emission units associated with the fermentation operations are not subject to the requirements of 326 IAC 8-5-3 (VOC Emission Limitations for Synthesized Pharmaceutical Manufacturing Operations).

(b) The emission units associated with the fermentation operations are not subject to the requirements of 326 IAC 8-1-6 (Best Available Control Technologies for VOC Emissions) because the VOC emissions associated with each facility are less than ~~250~~ **twenty-five (25)** tons per year

IDEM Contact

(a) Questions regarding this proposed Prevention of Significant Deterioration (PSD) Flexible Permit and Part 70 Operating Permit Renewal can be directed to Deena Patton at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5400 or toll free at 1-800-451-6027 extension 4-5400.

(b) A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Part 70 Operating Permit Renewal

Source Background and Description

Source Name:	**Evonik Corporation Tippecanoe Laboratories**
Source Location:	**1650 Lilly Road, Lafayette, IN 47909**
County:	**Tippecanoe**
SIC Code:	**2833; 2834; 2879; 2869**
Permit Renewal No.:	**T157-33448-00006**
Permit Reviewer:	**Deena Patton**

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Evonik Corporation Tippecanoe Laboratories relating to the operation of a stationary pharmaceutical and animal health manufacturing plant. On July 22, 2013, Evonik Corporation Tippecanoe Laboratories submitted an application to the OAQ requesting to renew its operating permit. Evonik Corporation Tippecanoe Laboratories was issued its first Part 70 Operating Permit Renewal (T157-26575-00006) on October 6, 2009.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

(a) D.1 Utilities and Utilities Support Operations: The utilities operations consist four natural gas boilers with distillate fuel oil backup supplied by one fuel oil tank. The boilers provide steam to process operations in bulk pharmaceutical manufacturing and fermented products. The utility support facilities include the lime system for the potable water system (T9/T23) and glycol tanks for heating and cooling of BCM tanks and chillers. The detailed equipment list is located in Section D.1 of this permit.

(b) D.2 Engine Operations: The engine operations consist of the emergency reciprocating internal combustion engines at the facility. These engines consist of BCMgenerators and compressors. The detailed equipment list is located in Section D.2 of this permit.

(c) D.3 Fermented Products - Fermentation Operations: The fermentation processes include the dry material storage area (T46), the raw material prep area (T1), the fermentation production areas (T2, T2A and T2C) and product storage area (T63). The detailed equipment list is located in Section D.3 of this permit.

(d) D.4 Fermented Products - Purification Operations: The whole broth products from fermentation are stored in Building T63 and then continuously fed to the purification equipment as capacity allows. The purification department consists of extraction and elution processes (T3), solvent recovery (T4), raw and recovered material storage (T147), and product storage (T39). The detailed equipment list is located in Section D.4 of this permit.

(e) D.5 Fermented Products - Support Operations: The support operations for the Fermented Products (FP) area consist of the FP wastewater treatment plant and FP wastewater sludge storage operations. The detailed equipment list is located in Section D.5 of this permit.

(f) D.6 Bulk Chemical Manufacturing (BCM) - Process Operations: The emission units in the

BCM production operations can be generally described as process vessels (tanks), crystallizers, filters, centrifuges, dryers, process scrubber systems, and process condenser systems and are referred to as process vents. The detailed equipment list is located in Section D.6 of this permit.

(g) D.7 BCMBCM Support Operations - Solvent Recovery Operations: The BCM solvent recovery emission units can be generally described as columns, stills, evaporators, accumulators, and receivers and are referred to as process vents. The detailed equipment list is located in Section D.7 of this permit.

(h) D.8 BCM Support Operations - Individual Drain Systems (IDSs): The BCM IDSs consist of stationary systems used to convey waste streams to a waste management unit. Segregated stormwater sewer systems, designed and operated for the sole purpose of collecting rainfall-runoff at a facility, and segregated from all other IDSs, are excluded from this definition. The detailed equipment list is located in Section D.8 of this permit.

(i) D.9 BCM Support Operations – Solvent Storage Tank Operations: The BCM solvent storage tanks are defined as any vessel designed to store raw material feedstocks or used solvent to be recovered that contain VOCs and/or VOHAP. Pressure vessels greater than 204.9 kPa without emissions to the atmosphere, vessels attached to motor vehicles, or vessels used to store beverage alcohol are not BCM solvent storage tanks. The detailed equipment list is located in Section D.9 of this permit.

(j) D.10 BCM Support Operations – Waste Storage Tank Operations: The BCM waste storage tanks are defined as any waste management unit designed to contain an accumulation of waste material containing VOCs and/or VOHAP. Pressure vessels greater than 204.9 kPa without emissions to the atmosphere or vessels attached to motor vehicles are not BCM waste storage tanks. The detailed equipment list is located in Section D.10 of this permit.

(k) D.11 BCM Support Operations - Waste Containers: Waste containers are segregated into small and large containers. A small BCM waste container, such as a drum, contains VOC and/or VOHAP with a capacity greater than 26.4 gallons and equal to or less than 110.5 gallons. A large BCM waste container, such as a tanker truck, contains VOC and/or VOHAP with a capacity greater than 110.5 gallons. Identification of these types of containers have not been individually listed given they are portable and continually change.

(l) D.12 T49 Liquid Waste Incinerator: The T49 liquid waste incinerator provides treatment of on-site and limited off-site hazardous and non-hazardous waste, including high Btu liquids (primary waste) and low Btu liquids (secondary waste). The T49 incinerator consists of a primary combustion chamber followed by a wet quench system, a condenser/absorber, a particulate matter scrubber, and a stack with continuous emissions monitoring. The detailed equipment list is located in Section D.12 of this permit.

(m) D.13 T149 Solid-Liquid Waste Incinerator: The T149 solid-liquid waste incinerator provides treatment of on-site and limited off-site hazardous and non-hazardous waste, including containerized waste (hazardous and non-hazardous), high Btu liquids (primary waste) and low Btu liquids (secondary waste).
The T149 solid-liquid waste incinerator consists of a rotary kiln and vertical up-fired secondary combustion chamber (SCC), a wet ash handling system, a NO_x abatement system, a wet quench system, a condenser/absorber, a particulate matter scrubber, an induced draft (ID) fan, and a stack with continuous emissions monitoring. The detailed equipment list is located in Section D.13 of this permit.

(n) D.14 BCM Control Systems – RTO Operations: The regenerative thermal oxidizer (RTO) system consists of a closed-vent system that transports fume streams exhausted from the BCM manufacturing and support operations to the RTOs. The RTOs, designed to thermally destruct the VOC and/or VOHAP laden fume streams from the process and support operations, are also equipped with caustic scrubbing systems to control hydrogen halide and halogen emissions. The detailed equipment list is located in Section D.14 of this permit.

(o) D.15 BCM Control Systems – T79 Fume Incinerator System Operations: The T79 fume incinerator system consists of a closed-vent system that transports fume streams exhausted from the BCM manufacturing and support operations to the T79 incinerator. The T79 incinerator, designed to thermally destruct the VOC and/or VOHAP laden fume streams from the process and support operations, are also equipped with caustic scrubbing systems to control hydrogen halide and halogen emissions. The detailed equipment list is located in Section D.15 of this permit.

(p) D.16 BPM Support Operations – T171 Research and Development and Pharmaceutical Manufacturing Operations Conditions: The emission units in the T171 production operations can be generally described as process vessels (tanks), slurry mills, dryers and filter presses used primarily for pharmaceutical research and development. Minimal commercial production may occur in T171. The detailed equipment list is located in Section D.16 of this permit.

(q) D.18 BCM – Chemical Wastewater Treatment Plant: The wastewater generated from the BCM operations is collected in wastewater holding tanks, transferred through a clarification process, followed by the biological treatment facility. The detailed equipment list is located in Section D.18 of this permit.

(r) D.19 BCM Support Operations – Transfer of Affected Wastewater of Offsite Treatment: Facilities for the shipment of wastewater generated onsite to an offsite treatment facility and facilities for the receipt of offsite wastewater to be treated onsite.

(s) D.20 BCM Support Operations – Transfer Rack Operations: Transfer racks are used to load material into tanker trucks at T146 and T19. The detailed equipment list is located in Section D.20 of this permit..

(t) D.21 Degreaser Operations: The degreasing operations at the facility consist of cold cleaning organic solvent degreasing operations that do not exceed 145 gallons of solvent usage per 12 months. The requirements for these degreasing operations are included in Section D.21 of this permit.

(u) D.22 Architectural and Industrial Maintenance (AIM) Coatings Operations: AIM coating operations may occur throughout the facility. The requirements for AIM coatings are included in Section D.22 of this permit.

Emission Units and Pollution Control Equipment Removed From the Source

The source has removed the following emission units:

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
Building T6:					
BLR001	Coal/Natural Gas Boiler	S-T6-BLR001	92	MMBtu/hr	Multiclone001
BLR002	Coal/Natural Gas Boiler	S-T6-BLR002	92	MMBtu/hr	Multiclone002
BLR003	Coal/Natural Gas Boiler	S-T6-BLR003	92	MMBtu/hr	Multiclone003

CONASH	Ash Handling System	PV-T6-CONASH	1,805	lbs/hr	Baghouse
Outside Building T6:					
COAL	Coal Pile	N/A	N/A	N/A	N/A
CNV001-CNV005	Covered Coal Conveyor System	N/A	N/A	N/A	N/A

Insignificant Activities

The source also consists of the following insignificant activities:

(a) This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

(1) D.3 Fermented Products - Fermentation Operations: Various mixers, bump tanks and fermenter tanks in the fermentation operations each emitting less than 5 pounds PM10 per hour or 25 pounds PM10 per day. [326 IAC 6-3]

(2) D.8 BCM Support Operations - Individual Drain Systems (IDSs): Individual drain systems (sumps) in the BCM operating areas each emitting less than less than 3 pounds VOC per hour or 15 pounds VOC per day. [40 CFR 63.1256(e), 40 CFR 63.689(b), and 326 IAC 2-2]

(3) D.10 BCM Support Operations – Waste Storage Tank Operations: Various BCM waste tanks and knock out pots in the BCM operating areas each emitting less than 3 pounds VOC per hour or 15 pounds VOC per day. [40 CFR 63.1256(b), 40 CFR 63.685, 40 CFR 60.110b, 326 IAC 2-2, and 326 IAC 8-5-3]

(4) D.11 BCM Support Operations – Waste Containers: Small and large waste containers in the BCM operating areas each emitting less than less than 3 pounds VOC per hour or 15 pounds VOC per day. [40 CFR 63.1256(d), 40 CFR 63.688, 326 IAC 2-2]

(5) D.6 BCM Production Operations: Heat exchange systems in the BCM operating areas are classified as insignificant activities under the closed loop heating and cooling system clause pursuant to 326 IAC 2-7-1(21)(FF) and 40 CFR 63.1252(c).

(6) D.16 BPM Support Operations – T171 Research and Development and Pharmaceutical Manufacturing Operations: The T171 equipment components from process piping systems, including pumps, valves, and piping connections [flanges] are classified as insignificant activities under the research and development facility clause pursuant to 326 IAC 2-7-1(21)(E). [40 CFR 63.1255 and 40 CFR 61, Subpart V]

(7) D.21 Degreaser Operation Conditions: This section provides specific requirements for cold cleaning organic solvent degreasing operations constructed after January 1, 1990 at the site which are defined as insignificant activities pursuant to 326 IAC 2-7-1(21)(G)(vi)(CC).

(b) This stationary source consists of the following types of insignificant activities, as defined in 326 IAC 2-7-1(21) that do not have applicable requirements:

(1) Natural gas-fired combustion sources with heat input equal to or less than 10 MMBtu per hour;

(2) Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than 6 MMBtu per hour;

(3) Equipment powered by internal combustion engines of capacity equal to or less than 0.5 MMBtu per hour, except where the total capacity of equipment operated by one stationary source exceeds 2 MMBtu per hour;

(4) A gasoline fuel transfer and dispensing operation handling less than or equal to 1300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons;

(5) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to 10,500 gallons, and dispensing less than or equal to 230,000 gallons per month;

(6) VOC/HAP storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons;

(7) VOC/HAP vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;

(8) Refractory storage not requiring air pollution control equipment;

(9) Machining where an aqueous cutting coolant continuously floods the machining interface;

(10) Degreasing operations that do not exceed 145 gallons of solvent usage per 12 months, except if subject to 326 IAC 20-6;

(11) Cleaners and solvents having a vapor pressure equal to or less than 2kPa measured at 38°C or having a vapor pressure equal to or less than 0.7kPa measured at 20°C and not exceeding a combined usage rate of 145 gallons per 12 months;

(12) Closed loop heating and cooling systems;

(13) Structural or fabrication cutting 200,000 linear feet or less of one inch plate or equivalent or using 80 tons or less of welding consumables;

(14) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to 1% by volume;

(15) Activities associated with the transportation and treatment of sanitary sewage, provided discharge to the treatment plant is under the control of the owner/operator, that is, an on-site sewage treatment facility;

(16) Any operation using aqueous solutions containing less than 1% by weight of VOCs excluding HAPs;

(17) Forced and induced draft noncontact cooling tower systems not regulated under a NESHAP;

(18) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;

(19) Heat exchanger cleaning and repair;

(20) Process vessel degassing and cleaning to prepare for internal repairs;

(21) Stockpiled soils from soil remediation activities that are covered and waiting transport for disposal;

(22) Paved and unpaved roads and parking lots with public access;

(23) Asbestos abatement projects regulated by 326 IAC 14-10;

(24) Purging of gas lines and vessels that is related to routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process;

(25) Equipment used to collect any material that might be released during a malfunction, process upset, or spill cleanup, including catch tanks, temporary liquid separators, tanks and fluid handling equipment;

(26) Blowdown from sight glasses; boilers; compressors; pumps; and cooling towers;

(27) On-site fire and emergency response training approved by the department;

(28) Gasoline emergency generators not exceeding 110 horsepower;

(29) Diesel emergency generators not exceeding 1600 horsepower;

(30) Natural gas emergency turbines or reciprocating engines not exceeding 16,000 horsepower;

(31) Other emergency equipment such as stationary fire pumps;

(32) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including deburring, buffing, polishing, abrasive blasting, pneumatic conveying, and woodworking operations;

(33) Purge double block and bleed valves;

(34) Filter or coalescer media changeout;

(35) Vents from ash transport systems not operated at positive pressures;

(36) A laboratory as defined in 326 IAC 2-7-1(21)(G);

(37) Research and development facility as defined in 326 AIC 2-7-1(21)(H);

(38) Farm operations; and

(39) Other activities below insignificant threshold levels:

  (A) Portable cleaning and collection tanks less than 3 pounds VOC per hour or 15 pounds VOC per day;

(B) T4 sulfuric acid tank less than 5 pounds PM10 per day or 25 pounds PM10 per day;

(C) T47 trash transfer less than 5 pounds PM10 per day or 25 pounds PM10 per day;

(D) Sump tanks less than 3 pounds VOC per hour or 15 pounds VOC per day;

(E) T116 hydrochloric acid tank less than 5 pounds single HAP per day or 1 ton single HAP per year;

(F) T14 Ranney Well less than 5 pounds single HAP per day or 1 ton single HAP per year;

(G) T99 ethylene glycol expansion tanks/system less than 12.5 pounds combined HAP per day or 2.5 tons combined HAP per year;

(H) T100 MACE tanks/system less than 12.5 pounds per day or 2.5 tons combined HAP per year;

(I) T100 Unit 1 drumming operations less than 5 pounds PM10 per day or 25 pounds PM10 per day;

(J) T99/T100 solids particle sizing equipment (mills and delumpers) less than 5 pounds PM10 per day or 25 pounds PM10 per day; and

(K) Various fermentation and purification operations less than 3 pounds VOC per hour or 15 pounds VOC per day, less than 12.5 pounds per day or 2.5 tons combined HAP per year; and less than 5 pounds PM10 per day or 25 pounds PM10 per day. [See Section D.3 and D.4]

(40) T39 research and development activities defined in 326 IAC 2-7-1(21)(H).

Existing Approvals

Since the issuance of the Part 70 Operating Permit Renewal (157-26575-00006) on October 6, 2009, the source has constructed or has been operating under the following additional approvals:

Significant Permit Modification	157-26577-00006	October 6, 2009
Minor Source Modification	157-28530-00006	November 9, 2009
Administrative Amendment	157-28636-00006	November 9, 2009
Administrative Amendment	157-28727-00006	January 6, 2010
Significant Permit Modification	157-29126-00006	June 15, 2010
Significant Permit Modification	157-31009-00006	January 23, 2012
Significant Permit Modification	157-32172-00006	November 16, 2012
Administrative Amendment	157-32524-00006	January 7, 2013

Enforcement Issue

There are no enforcement actions pending.

Emission Calculations

The calculations submitted by the applicant have been verified and found to be accurate and correct. These calculations methodologies can be found in the documentation accompanying the original Part 70 permit application for the source.

County Attainment Status

The source is located in Tippecanoe County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard.[1]
$PM_{2.5}$	Unclassifiable or attainment effective April 5, 2005, for the annual $PM_{2.5}$ standard.
$PM_{2.5}$	Unclassifiable or attainment effective December 13, 2009, for the 24-hour $PM_{2.5}$ standard.
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.
[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.	

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Tippecanoe County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Tippecanoe County has been classified as attainment for $PM_{2.5}$. Therefore, direct $PM_{2.5}$, SO_2, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) Other Criteria Pollutants
Tippecanoe County has been classified as attainment or unclassifiable in Indiana for all criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this source is classified as a chemical process plant (pharmaceutical manufacturing), it is considered one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7. Therefore, fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

Unrestricted Potential Emissions	
Pollutant	Tons/year

Unrestricted Potential Emissions	
Pollutant	Tons/year
PM	> 100
PM_{10}	> 100
$PM_{2.5}$	> 100
SO_2	>100
VOC	> 100
CO	> 100
NO_x	>100
GHGs as CO_2e	>100,000
Single HAP	>10
Total HAP	>25

The Permittee has agreed that they are major for Part 70 Permits 326 IAC 2-7, Prevention of Significant Deterioration (PSD) 326 IAC 2-2, and Hazardous Air Pollutants 326 IAC 20. No calculations of unrestricted Potential to Emit have been done for any criteria pollutant.

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all regulated pollutants are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7 and will be issued a Part 70 Operating Permit Renewal.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of GHGs is equal to or greater than one hundred thousand (100,000) tons of CO_2 equivalent emissions (CO_2e) per year. Therefore, the source is subject to the provisions of 326 IAC 2-7 and will be issued a Part 70 Operating Permit Renewal.

(c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is equal to or greater than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is equal to or greater than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

Part 70 Permit Conditions

This source is subject to the requirements of 326 IAC 2-7, because the source met the following:

(a) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of issuance of Part 70 permits.

(b) Monitoring and related record keeping requirements which assume that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.

Potential to Emit After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any new control equipment is considered federally enforceable only after issuance of this Part 70 permit renewal, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)									
	PM	PM_{10}*	$PM_{2.5}$**	SO_2	NO_x	VOC	CO	GHGs	Total HAPs	Worst Single HAP
Bulk Pharmaceutical Manufacturing (BPM) Operations	>100	>100	>100	>100	>100	>100	>100	>100,000	>25	>10
BPM Support	>100	>100	>100	>100	>100	>100	>100			
T49 Liquid Waste Incineration	>100	>100	>100	>100	>100	>100	>100			
T149 Solid Liquid Waste Incinerator	>100	>100	>100	>100	>100	>100	>100			
Server Room Emergency Gen.	0.22	0.22	0.22	0.21	3.12	0.25	0.67	115.58	2.73E-03	8.30E-04 (Formaldehyde)
T62	0.17	0.17	0.17	0.15	2.33	0.19	0.50	86.30	2.03E-03	6.20E-04 (Formaldehyde)
T6	0.00	0.00	0.00	0.00	0.03	0.004	0.02	6.15	2.54E-03	1.98E-03 (Formaldehyde)
T148	0.00	0.00	0.00	0.00	0.07	0.01	0.05	13.90	5.76E-03	4.49E-03 (Formaldehyde)
PAL Limit	-	-	-	2059.7	-	-	-	-	-	-
Total PTE of Entire Source	**>100**	**>100**	**>100**	**>100**	**>100**	**>100**	**>100**	**>100,000**	**>25**	**>10**
Title V Major Source Thresholds	NA	100	100	100	100	100	100	100,000 CO_2e	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000 CO_2e	NA	NA

negl. = negligible
* Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a regulated air pollutant".
**$PM_{2.5}$ listed is direct $PM_{2.5}$.

(a) This existing stationary source is major for PSD because the emissions of at least one criteria pollutant are greater than one hundred (>100) tons per year, and it is in one of the twenty-eight (28) listed source categories.

(b) GHG emissions are equal to or greater than one hundred thousand (>100,000) tons of CO_2 equivalent (CO_2e) emissions per year.

D.1: Utilities and Utilities Support Operations

Background and Description

The utilities operations consist of four natural gas boilers with fuel oil backup supplied by one fuel oil tank. The boilers provide steam to process operations in bulk chemical manufacturing (BCM) and fermented products.

The utility support facilities include the lime system for the potable water system (T9/T23) and glycol tanks for heating and cooling of BCM tanks and chillers.

Types of Emission Units and Pollution Control Equipment

Emission* Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
Building T6:					
BLR004	Natural Gas/Fuel Oil Boiler	S-T6-BLR004	142	MMBtu/hr	None
BLR005	Natural Gas/Fuel Oil Boiler	S-T6-BLR005	97	MMBtu/hr	None
Building T26:					
BLR4001	Natural Gas/Fuel Oil Boiler 4001	S-T26-BLR4001	156.1	MMBtu/hr	None
BLR4002	Natural Gas/Fuel Oil Boiler 4002	S-T26-BLR4002	156.1	MMBtu/hr	None

* In this permit, boilers BLR004, BLR005, BLR006 and BLR007 are referred to as Boilers 4 and 5, 4001 and 4002, respectively.

The following emission units are not subject to applicable requirements described in this D section and are listed only for informational purposes:

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
Outside Building T6:					
OILTK001*	Fuel Oil Storage Tank	PV-T6-OILTK001	250,000	gallons	None
T97/T98*	Glycol System	N/A	45,000	gallon	None
T9/T23*	Lime Storage Silo	N/A	79.5	lb/hr	None

* Emission units marked with a single asterisk are insignificant activities as defined in 326 IAC 2-7-1(21). Specifically, the fuel oil storage tank is an insignificant activity pursuant to 326 IAC 2-7-1(21)(A)-(C).

Insignificant Activities

(a) Fuel Oil Storage Tank

The fuel oil tank is a vertical, fixed roof type with a storage capacity of 250,000 gallons. The maximum annual fuel oil throughput is 30,000gal/yr. This tank is used to store fuel oil as a backup fuel source for Boilers 4, 5, 4001, and 4002.
The fuel oil tank is considered an insignificant activity because the uncontrolled potential emissions are less than the applicability thresholds stated in 326 IAC 2-7-1(21)(A).

(b) Lime System for the T9/T23 Potable Water Process Systems

Lime is used to treat (soften) the potable water used on the site. The lime system serves two potable water process systems (T9 and T23), but only one of the water systems can operate at a time. Lime is transferred to the lime storage silo with an integrated bin vent, via lime bags. Particulate matter is the only type of emission generated from this process. The lime from the lime storage silo is injected to the potable water for treatment via a pneumatic system. There are no emissions generated from the injection process because the lime is injected directly into the water.

The lime system is an insignificant activity because the potential uncontrolled particulate emissions are below the particulate threshold levels (5 lbs/hr, 25 lbs/day, and 5 tons/yr) that define the facility as an insignificant activity pursuant to 326 IAC 2-7-1(21)(A) through (C).

(c) Glycol System

The glycol system is used for more efficient heating and cooling of process tanks and chillers in bulk chemical manufacturing. The glycol tanks are considered insignificant activities pursuant to 326 IAC 2-7-1(21)(vi)(FF) (Closed loop heating and cooling systems).

Federal Rule Applicability

The federal rules that apply to these utilities operations are as follows:

(a) Boilers 4001 and 4002

40 CFR Part 60 Subpart Db (NSPS for Industrial Steam Generating Units) – This standard applies to units constructed, reconstructed, or modified after June 19, 1984 with the capability of combusting more than 100 MMBtu per hour heat input. Boilers 4001 and 4002 are subject to this regulation.

Pursuant to 40 CFR 60.44b(a), the NOx emission rate from Boilers 4001 and 4002 shall not exceed 0.2 lb per MMBtu per boiler. The NOx emission limit shall be based on a 30-day rolling average. The NOx emission limit applies at all times, including periods of startup, shutdown, and malfunction.

(b) Boilers 4, 5, 4001 and 4002

40 CFR Part 63 Subpart DDDDD (Boiler MACT) – This standard applies to major source Industrial, Commercial, and Institutional Boilers and Process Heaters. Boilers 4, 5, 4001, and 4002 are subject to this regulation.

The following non-applicability determinations are included for clarification purposes.

(a) Boilers 4, 5, 4001 and 4002

40 CFR Part 60 Subpart D (New Source Performance Standard (NSPS) for Fossil-Fuel Fired Steam Generating Units) – This source is not subject to 40 CFR Part 60, Subpart D because none of the boilers at the plant site exceed 250 MMBtu/hour in heat input capacity [40 CFR 60.40(a)(1)].

40 CFR Part 60 Subpart Db (NSPS for Industrial-Commercial-Institutional Steam Generating Units) – Boiler 4 is not subject to 40 CFR Part 60 Subpart Db because, although it has a maximum heat input capacity of greater than 100 MMBtu/hr, it did not commence construction and was not reconstructed or modified after June 19, 1984. Boiler 5 has a capacity less than 100 MMBtu/hr, so it is also not subject to 40 CFR Part 60 Subpart Db.

40 CFR Part 60 Subpart Dc (NSPS for Small Industrial Steam Generating Units) – Boiler 5 is not subject to 40 CFR Part 60 Subpart Dc because, although it has a maximum heat input capacity between 10 and 100 MMBtu/hr, it was not constructed, reconstructed, or modified after June 9, 1989. Boilers 4, 4001 and 4002 do not have capacities between 10 and 100 MMBtu/hr, so they are also not subject to 40 CFR Part 60 Subpart Dc. [40 CFR 60.40c(a)]

(b) Fuel Oil Storage Tank

40 CFR Part 60 Subpart Kb (NSPS for Volatile Organic Liquid Storage Vessels – Pursuant to 40 CFR 60.110b(c), the fuel oil storage tank, constructed in 1973, is not subject to the control requirements of this subpart because the true vapor pressure of fuel oil is less than 3.5 kPa.

State Rule Applicability

(a) Lime System for the T9/T23 Potable Water Process Systems

***326 IAC 6-3-2 (Process Weight Rate)* – This rule does not apply to processes that have the potential to emit less than 0.551 pounds per hour of particulate matter before controls. The lime system is not subject to the requirements of 326 IAC 6-3 because potential uncontrolled emissions from the system is less than 0.551 pounds PM per hour.**

(b) Glycol System

There are no state rules that apply to the glycol system.

(c) Boilers

326 IAC 6-2-3 (Particulate Rules for Indirect Heating) – This rule applies to Boilers 4 and 5. The particulate emissions from Boiler 4 shall not exceed 0.39 pounds per MMBtu heat input and Boiler 5 shall not exceed 0.31 pounds per MMBtu heat input.

326 IAC 6-2-4 (Particulate Matter (PM) Limitations) – Pursuant to 326 IAC 6-2-4(a), the PM emission rate from each of Boilers 4001 and 4002 shall not exceed 0.19 pounds per MMBtu heat input.

326 IAC 5-2 (Opacity Limitations) – Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as or sixty percent (60%) for more than a cumulative total of fifteen
(15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 5-1-3 (Temporary Alternative Opacity Limitations)
When starting up or shutting down a boiler, opacity may exceed the applicable limits according to 326 IAC 5-2. However, opacity levels shall not exceed sixty percent (60%) for any six (6) minute averaging period. Opacity in excess of the applicable limit established in 326 IAC 5-1-2 shall not continue for more than two (2) six (6)-minute averaging periods in any twenty-four (24) hour period.

326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations) – This rule limits the SO_2 emissions from boilers.

The SO2 emissions from Boilers 4 and 5 shall be limited to 0.5 pounds per MMBtu heat input, when burning No. 2 fuel oil.

Pursuant to 326 IAC 7-1.1 (SO_2 Emission Limitations), 326 IAC 12, and 40 CFR 60, Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units):

(1) The SO_2 emission rate from Boilers 4001 and 4002 shall not exceed 0.32 pounds per million Btu heat input; or

(2) The fuel oil shall contain no more than 0.3 weight percent sulfur.

(3) If the Permittee burns either natural gas or very low sulfur oil, the Permittee shall be in compliance with Conditions D.20.3(a)(1) and (2).

326 IAC 3-7-4 (Fuel Oil Sampling and Analysis Procedures) – Before fuel oil can be burned in Boilers 4 and 5, the fuel oil analysis of the sulfur content must be compliant with the SO2 limitations established in 326 IAC 7-1.1-2.

326 IAC 2-2 (Prevention of Significant Deterioration (PSD)): For Boilers 4001 and 4002, compliance with the permit CO emission limits and fuel oil consumption limit will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

(d) Fuel Oil Storage Tank

326 IAC 8-9 (Volatile Organic Liquid Storage Vessels) – The fuel oil tank is not subject to the requirements of this rule because the site is located in Tippecanoe County. According to 326 IAC 8-9-1(a), this rule only applies to tanks located in Clark, Floyd, Lake or Porter County.

D.2: Engine Operations

Background and Description

There are various generators and compressors on site that are used primarily to supply power to the site's fire pumps or during other emergency situations. Applicability of the federal regulations depends on the date construction commenced, and (for some regulations) when the engine was manufactured; refer to Federal Rule Applicability below. The construction commenced and engine manufactured dates are included in the emission units section of Section D.2 to clearly indicate to which federal rule(s) the engine is subject.

Types of Emission Units and Pollution Control Equipment

The engine operations include the following emission units:

Engine ID	Engine Type[1]	Stack/ Vent	Nominal Capacity	UOM	Control Device	Construction Commenced	Date Manufactured	NSPS Subpart IIII	MACT Subpart ZZZZ
T5	Emergency Diesel Generator	N/A	380	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source
T6	Emergency Natural Gas Generator	N/A	60	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source
T26	Emergency Diesel Generator	N/A	201	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source
T26	Emergency Diesel Air Compressor	N/A	125	HP	None	Post-7/1/2005	Post 4/1/2006 and Pre-6/12/2006	Affected Source	Existing Affected Source
T62	Emergency Diesel Air Compressor	N/A	300	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source
T62	Emergency Diesel Generator	N/A	1,475	HP	None	Pre-7/11/2005	Pre-4/1/2006	Not Applicable	Exempt: 63.6590(b)(3)(iii)
T70	Emergency Diesel Generator	N/A	402	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source
T121	Emergency Diesel Generator	N/A	1,676	HP	None	Pre-12/31/2002	Pre-4/1/2006	Not Applicable	Existing Affected Source

Engine ID	Engine Type[1]	Stack/ Vent	Nominal Capacity	UOM	Control Device	Construction Commenced	Date Manufactured	NSPS Subpart IIII	MACT Subpart ZZZZ
T126	Emergency Diesel Generator	N/A	402	HP	None	Post-6/12/2006	Post-4/1/2006	Affected Source	New Affected Source
T135	Emergency Diesel Generator	N/A	390	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source
T148	Emergency Natural Gas Generator	N/A	134	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source
T149	Emergency 4-Stroke Gasoline Engine	N/A	11	HP	None	Pre-6/12/2006	Pre-4/1/2006	Not Applicable	Existing Affected Source

Insignificant Activities

All of the engines listed in Section D.2 of the permit are operated only in emergency situations, and therefore classified as insignificant activities under 326 IAC 2-7-1(21)(G)(xxii)(BB) (Emergency generators).

Federal Rule Applicability

<u>40 CFR Part 60 Subpart IIII (New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines)</u> – This regulation applies to compression ignition engines in which construction commences after 7/11/2005 and are manufactured after 4/1/2006.

<u>40 CFR Part 63 Subpart ZZZZ (National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines)</u> – This regulation applies to compression ignition and spark ignition engines. Engines greater than 500 HP in which construction commences before 12/13/2002 are considered existing affected sources under the rule; if construction commences on or after 12/31/2002, then the engine is considered a new affected source. Engines equal to or less than 500 HP, in which construction commences before 6/12/2006 are considered existing affected sources under the rule; if construction commences on or after 6/12/2006, then the engine is considered a new affected source.

Federal Rule Non-Applicability

The following non-applicability determinations are included for clarification purposes.

<u>40 CFR Part 60 Subpart JJJJ (New Source Performance Standard for Stationary Spark Ignition Internal Combustion Engines)</u> – None of the less spark ignition engines at the source (all of which are <500 HP) are subject to 40 CFR Part 60 Subpart JJJJ because construction of the engines did not commence after 6/12/06 and manufactured on or after 7/1/2008.

State Rule Applicability

The requirements for the engines are reflected in the Plantwide Applicability Limitations (PAL) Permit.

D.3: Fermented Products -- Fermentation Operations

Background and Description

The fermentation operations include the dry material storage area (T46), raw material prep area (T1), fermentation production areas (T2, T2A, T2C) and product storage area (T63). PM/PM10 and VOC are the only emissions generated in the fermentation area. The following summary has been prepared for each of these areas making up the fermentation section of the Title V permit to document technical information used to prepare the Title V permit conditions and to demonstrate compliance with the Title V requirements.

Types of Emission Units and Pollution Control Equipment

(a) Dry Material Bulk Storage Area (T46)
The bulk storage area consists of 12 bins equipped with voluntary pulsed jet bag filters. Dry raw material such as corn gluten, soybean meal and calcium carbonate are used in fermentation as nutrient media for the microorganisms. The bulk storage area is used for high-volume dry raw materials. These materials are pneumatically transferred from rail cars or tank trucks to the storage bins. Particulate is the only pollutant emitted from the bulk storage area.
(b) Bulk Liquid Storage Area (T1)
The liquid storage area is made up of liquid storage tanks that store raw materials such as lard and vegetable oil, liquid waste from the fermentation operations, and whole broth from the fermentation operations. The emissions from these operations are insignificant and were not calculated. There are no dry materials added to these tanks and the tanks are not agitated. The storage tanks are not subject to any applicable rules or compliance monitoring requirements. This equipment is being included in the description section of the Title V permit for clarification purposes only.
(c) Raw Material Prep Area (T1)
The raw material prep area consists of a dispensing station of raw materials, mixing tanks, make-up tanks and slurry tanks. Raw material such as corn gluten, soybean meal and calcium carbonate are used in fermentation as nutrient media for the microorganisms. Particulate is the only pollutant emitted from the raw material prep area.
(d) Fermentation Production Areas (T2, T2A, T2C)
The fermentation production areas consist of bump tanks and fermentation tanks. The fermentation process begins in the culture laboratory. In the laboratory, a shake flask containing sterile media is inoculated under sterile conditions using a preserved culture. The shake flask is grown for several days and then several shake flasks are used to inoculate a bump tank. The bump tank will be grown for several days and is used to inoculate a fermentor. During the process, air is sparged into the fermentors and bump tanks for agitation and to provide oxygen for the microorganisms. Both particulate and VOC emissions may be emitted from the fermentation production areas.
(e) Product Storage Area (T63)
The T63 product storage area consists of one tank that holds the filter broth. There are de minimis emissions from the filter broth storage area.

Insignificant Activities

Each emission unit associated with the fermentation operations is considered insignificant because the potential uncontrolled particulate emissions are below the particulate threshold levels (5 lbs/hr, 25 lbs/day, and 5 tons/yr) as defined in 326 IAC 2-7-1(21)(B) and the potential uncontrolled VOC emissions are below the VOC threshold levels (3 pounds per hour or 15 pounds per day) as defined in 326 IAC 2-7-1(21)(A)(iv).

Federal Rule Applicability

There are no federal rules that apply to the fermentation operations:

40 CFR Part 63 Subpart GGG (Pharmaceutical MACT Standard) – This rule does not apply to the emission units associated with the fermentation operations because these emission units do not process,

use or produce hazardous air pollutant (HAP) emissions in excess of 50 ppmv pursuant to 40 CFR 63.1251 (Process Vent Definition).

State Rule Applicability

(a) Dry Material Bulk Storage Area (T46)

326 IAC 6-3-2 (Process Weight Rate) - The process weight rate rule states that the rule does not apply to processes that have the potential to emit less than 0.551 pounds per hour of particulate matter before controls. The storage bins are not subject to the requirements of 326 IAC 6-3 because potential uncontrolled emissions from each bin are less than 0.551 pounds PM per hour.

(b) Bulk Liquid Storage Area (T1)

There are no state rules that apply to the bulk liquid storage tanks located in the fermentation operations.

(c) Raw Material Prep Area (T1)

326 IAC 6-3-2 (Process Weight Rate) - The process weight rate rule states that the rule does not apply to processes that have the potential to emit less than 0.551 pounds per hour of particulate matter before controls. The tanks in the raw material prep area are not subject to the requirements of 326 IAC 6-3 because potential uncontrolled emissions from each bin are less than 0.551 pounds PM per hour.

The mixers and conveyor for the mixers are subject to the requirements of this rule. These emission units were considered to be a single process for purposes of calculating the allowable particulate emissions pursuant to 326 IAC 6-3. The maximum throughput rate for the process (maximum material throughput = 1762 lbs/hr) was used to calculate the allowable emission rate:

Allowable PM, tons/yr = 4.10 x (Process Wt, tons/hr)0.67
= 4.10 x (0.532 tons/hr) 0.67
= 2.68 lbs PM/hr

Because the combined potential uncontrolled particulate emissions from one mixer (conveyor system can only fill one mixer at a time) and the conveyor (1.76 lb/hr) are less than the allowable emissions (2.68 lb/hr), the equipment is in compliance with this rule and no control device is required.

(d) Fermentation Production Areas (T2, T2A, T2C)

326 IAC 6-3-2 (Process Weight Rate) - The process weight rule (326 IAC 6-3) for particulate matter applies to the equipment associated with the fermentation production areas because the potential emissions are greater than 0.551 pounds per hour and are not an exempt category. The process weight rate rule requires that allowable emissions be calculated by “process”. The allowable emissions as defined in the existing construction permits are based on equipment constructed at the same time. In reviewing the Title V permit application, it was decided that related equipment be grouped as a process. The bump tanks in each building feed into any of the fermentation tanks located in the same building.
Therefore, the production equipment in each building was defined as a process. The calculation methodologies are provided in the Title V permit application. According to these calculations, the uncontrolled emissions for each fermentation production process are less than the respective allowable particulate emissions. Therefore, the process equipment is in compliance with this rule and no control devices are required.

326 IAC 8-5-3 (Synthetic Pharmaceutical RACT Rule) – The emission units associated with fermentation do not manufacture pharmaceutical products by chemical synthesis. Therefore, the emission units associated with fermentation are not subject to the requirements of 326 IAC 8-5-3 (VOC Emission Limitations for Synthesized Pharmaceutical Manufacturing Operations).

326 IAC 8-1-6 (State VOC BACT Rule) – The emission units associated with fermentation are not subject to the requirements of 326 IAC 8-1-6 (Best Available Control Technologies for VOC Emissions) because the VOC emissions associated with each emission unit or emission project are less than 25 tons per year.

D.4: Fermented Products -- Purification Operations

Background and Description

The whole broth products from fermentation are stored in Building T63 and then continuously fed to the purification equipment as capacity allows. The purification department consists of extraction and elution processes (T3), solvent recovery (T4), raw and recovered material storage (T147), and product storage (T39). PM/PM10 and VOC are generally the only emissions generated in the purification area. One dryer, the T3 rotary vacuum dryer (RVD), can emit HAPs when drying pharmaceutical product. The following summary has been prepared for each of these areas making up the purification section of the Title V permit to document technical information used to prepare the Title V permit conditions and to demonstrate compliance with the Title V permit requirements.

Types of Emission Units and Pollution Control Equipment

(a) Purification Production Area (T3)

The purification production areas isolate and purify fermentation products through extraction and elution processes. The extraction and elution equipment are closed systems and therefore generate de minimis VOC emissions. VOC emissions occur from the displacement of air at initial start up and from sweeping the equipment with nitrogen to maintain an inert atmosphere. Emissions from tanks that collect enriched solvent occur as they are filled. The particulate emissions are at de minimis levels.

Any pollution control equipment associated with the rotary vacuum dryer (T3-RVD40) is voluntary because the potential uncontrolled emissions are less than applicable limitations.

(b) Solvent Recovery Area (T4)

Solvents used in the purification processes are recovered for reuse in the solvent recovery area. Equipment in this area includes a distillation column and a process tank. The process tank is equipped with a process vent condensers to collect the recovered material; the condenser is considered an integral part of the process. There is also a sulfuric acid storage tank located outside to the northeast of Building T4. This tank was constructed in 1953 and vents to a voluntary caustic scrubber. The scrubber is a voluntary control because the potential uncontrolled emissions are less than the applicable limitations.

(c) Product Storage Area (T39)
Once the antibiotic material is purified, the product may be loaded into tanker trucks or temporarily stored in the product storage area (T39). The product storage area consists of eight storage tanks.

(d) Storage Tank Module (T147)

This storage tank module stores new and recovered solvent material used in the purification process, as well as waste material generated from the purification process.

The vent condensers associated with the storage tanks in the T147 tank module are not required controls because the potential uncontrolled emissions are less than the applicable limitations.

Insignificant Activities

(a) T3 Purification Production Area

With the exception of one evaporator, T3-EVAP305, the emission units associated with the T3 purification production area are considered “insignificant activities” because the potential emissions are less than the threshold values defined in 326 IAC 2-7-1(21).

(b) T4 Solvent Recovery Area

With the exception of one distilling column, T4-COL001, the emission units associated with the T4 solvent recovery area are considered “insignificant activities” because the potential emissions are less than the threshold values defined in 326 IAC 2-7-1(21).

(c) Product Storage Area (T39)

All or the emission units in the T39 product storage area are considered “insignificant activities” because the potential emissions are less than the threshold values defined in 326 IAC 2-7-1(21).

Federal Rule Applicability

(a) Building T3

NSPS 40 CFR Part 60 Subpart Kb (New Source Performance Standard for Volatile Organic Liquid Storage Vessels) – The T3 tanks are not subject to 40 CFR Part 60 Subpart Kb because they were all installed prior to the July 23, 1984 rule applicability date, and the tanks have not been modified since that date. Regardless, these tanks are process tanks and do not meet the definition of a storage vessel.

NESHAP 40 CFR Part 63 Subpart GGG (National Emissions Standards for Hazardous Air Pollutants for Pharmaceuticals Production) - With the exception of the rotary vacuum dryer, which is subject to the Pharma MACT process vent standard when it is used to dry pharmaceutical product and has process vent emissions equal to or greater than 50 ppm, the emission units associated with the T3 purification process are not subject to Subpart GGG because these emission units do not generate, produce or use HAP emissions in excess of 50 ppmv pursuant to 40 CFR 63.1251 (Process Vent Definition).

The Pharma MACT process-based annual mass limit of 900 kilograms (kg) per 365-day period is applied to the rotary vacuum dryer when it is subject to the Pharma MACT process vent standards.

(b) Solvent Recovery Area (T4)

NSPS 40 CFR Part 60 Subpart Kb (New Source Performance Standard for Volatile Organic Liquid Storage Vessels) – The two acid tanks are not subject to 40 CFR Part 60 Subpart Kb because these tanks were installed prior to the July 23, 1984 applicability date and have not been modified since that date.

NESHAP 40 CFR Part 63 Subpart GGG (National Emissions Standards for Hazardous Air Pollutants for Pharmaceuticals Production) - Building T4 is not subject to Subpart GGG because there are no HAPs emitted or used in the purification process.

(c) Product Storage Area (T39)

NSPS 40 CFR Part 60 Subpart Kb (New Source Performance Standard for Volatile Organic Liquid Storage Vessels) – The T39 storage tanks are not subject to 40 CFR Part 60 Subpart Kb because these tanks were installed prior to the July 23, 1984 applicability date and have not been modified since that date.

NESHAP 40 CFR Part 63 Subpart GGG (National Emissions Standards for Hazardous Air Pollutants for Pharmaceuticals Production) - The T39 storage tanks are not subject to Subpart GGG because these emission units do not process, use, or produce hazardous air pollutant (HAP) emissions in excess of 50 ppmv pursuant to 40 CFR 63.1251 (Process Vent Definition).

(e) Storage Tank Module (T147)

NSPS 40 CFR Part 60 Subpart Kb (New Source Performance Standard for Volatile Organic Liquid Storage Vessels) – The storage tanks (T147-001 – T147-012) associated with the T147 tank module are not subject to 40 CFR Part 60 Subpart Kb, because the individual tank capacities are less than 75 cubic meters.

NSPS 40 CFR Part 60 Subpart VV (New Source Performance Standard for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry) – The storage tanks in the T147 tank module are not subject to this rule. Although the site is a synthetic organic chemical manufacturing facility and the T147 tanks were constructed after the applicability date, the tanks do not contain chemicals referenced in the rule. Therefore, this rule does not apply to the T147 tank module.

This determination is based on the decision to dedicate the T147 tank module to provide service to only the fermented products manufacturing area. Because the fermented products manufacturing area does not use chemicals referenced in the rule, this rule does not apply.

The existing permit requirement in CP 157-3319 relating to the T147 tank module and 326 IAC 8-5-3 has not been incorporated into the Title V permit.

NESHAP 40 CFR Part 63 Subpart GGG (National Emissions Standards for Hazardous Air Pollutants for Pharmaceuticals Production) - The storage tanks associated with the T147 tank module are not subject to Subpart GGG because these tanks do not store HAP compounds pursuant to 40 CFR 63.1251 (Storage Tank Definition).

State Rule Applicability

(a) Building T3

326 IAC 8-1-6 (VOC BACT Rule) - The T3 purification process equipment is not subject to 326 IAC 8-1-6 because either the equipment was installed before January 1, 1980 or VOC emissions from the equipment are less than 25 tons per year.

326 IAC 8-5-3 (Synthesized Pharmaceutical Manufacturing Operations) – With the exception of the rotary vacuum dryer, the fermentation and purification operations do not manufacture pharmaceutical products by chemical synthesis. Therefore, this equipment is not subject to this requirement.

The rotary vacuum dryer has the capability to dry pharmaceutical intermediates/products produced by chemical synthesis. However, when the dryer processes chemically synthesized products, the potential to emit VOC is less than 15 lb/day. Therefore, the control requirements of Rule 8-5-3 do not apply to the rotary vacuum dryer, even when processing chemically synthesized products.

326 IAC 8-6-1 (Organic Solvent Rule) - The T3 purification process equipment is not subject to the requirements of 326 IAC 8-6-1 because the equipment was installed prior to October 7, 1974 or after January 1, 1980, or the equipment does not have potential VOC emissions greater than 100 tons per year.

(b) Solvent Recovery Area (T4)

326 IAC 8-1-6 (VOC BACT Rule) - The emission units associated with the T4 solvent recovery operations are not subject to 326 IAC 8-1-6 because the equipment was installed before January 1, 1980 or VOC emissions are less than 25 tons per year.

326 IAC 8-5-3 (Synthesized Pharmaceutical Manufacturing Operations) - The fermentation and purification operations do not manufacture pharmaceutical products by chemical synthesis. Therefore, this equipment is not subject to this requirement.

326 IAC 8-6-1 (Organic Solvent Rule) - The T4 solvent recovery equipment is not subject to the requirements of 326 IAC 8-6-1 because the equipment was installed prior to October 7, 1974 or after January 1, 1980.

(c) Product Storage Area (T39)

326 IAC 8-1-6 (VOC BACT Rule) - The T39 storage tanks are not subject to 326 IAC 8-1-6 because the equipment was installed before the January 1, 1980 applicability date.

326 IAC 8-5-3 (Synthesized Pharmaceutical Manufacturing Operations) - The fermentation and purification operations do not manufacture pharmaceutical products by chemical synthesis. Therefore, this equipment is not subject to this requirement.

326 IAC 8-6-1 (Organic Solvent Rule) - The T39 storage tanks are not subject to the requirements of 326 IAC 8-6-1 because tanks T39-021, T39-022, T39-023 were installed prior to the October 7, 1974 applicability date and because the potential VOC emissions from tanks T39-030, T39-031, T39-036, installed between October 7, 1974 and January 1, 1980, are less than 100 tons per year.

(d) Storage Tank Module (T147)

326 IAC 8-1-6 (VOC BACT Rule) - The storage tanks associated with the T147 tank module are not subject to 326 IAC 8-1-6 because the potential VOC emissions from the tanks are less than 25 tons per year. This determination is based on the potential emission calculations using the worst-case solvent (amyl acetate) used in the purification operations since this tank module is dedicated to the fermented products manufacturing area.

326 IAC 8-6-1 (Organic Solvent Rule) - The storage tanks associated with the T147 tank module are not subject to the requirements of 326 IAC 8-6-1 because the tanks were installed after January 1, 1980.

326 IAC 8-5-3 (Synthesized Pharmaceutical Manufacturing Operations) – The T147 tank module only serves the fermented products manufacturing area. Products manufactured in the fermented products area are based on fermentation principles, not by chemical synthesis. Therefore, the storage tanks associated with T147 tank module are not subject to this requirement.

326 IAC 2-2 (Prevention of Significant Deterioration) – Because the fermented products (fermentation and purification) operations manufacture dedicated products, which do not require many physical changes or changes in the method of operation, this flexibility is not necessary. Using solvents associated with the fermented products operations; the potential uncontrolled VOC emission calculations for the T147 tank module are below the PSD significant threshold levels. Therefore, the emission limit required by CP 157-3319 has not been included in the Title V permit. Any change to the T147 tank module would require a permit assessment before such change could be made.

Compliance Requirements

The emission units associated with the purification operations are not subject to any compliance requirements beyond record keeping requirements.

D.5: Fermented Products -- Support Operations

Background and Description

The support operations for the Fermented Products (FP) area consists of the FP wastewater treatment plant and FP wastewater sludge storage operations. The pollutants of concern are VOCs, hydrogen sulfide, total reduced sulfur compounds, reduced sulfur compounds, SO2, CO, NOx and particulates. The following summary has been prepared for each of these areas making up the FP Support Operations section of the Title V permit to document technical information used to prepare the Title V permit conditions and to demonstrate compliance with the Title V permit requirements.

Types of Emission Units and Pollution Control Equipment

(a) Fermented Products Wastewater Treatment Plant

The wastewater from the fermentation and purification manufacturing areas is collected in an equalization system. The wastewater is then treated in the biological treatment facilities consisting of aeration tanks, clarifiers, and nitrification/denitrification tanks. A majority of the emissions associated with the wastewater treatment plant are exhausted to a voluntary thermal research foul air incinerator (T174) for odor control.

(b) Fermented Products Wastewater Sludge Management

Upon the completion of wastewater treatment, sludge is removed from the clarifiers and a portion is wasted from the system. This sludge is centrifuged to increase the solids content and then stored in four bio-solids storage tanks. Emissions from the bio-solids storage tanks are controlled by the iron sponge reactor. Emissions may also be voluntarily controlled by the thermal research foul air incinerator (T174) for odor control.

Insignificant Activities

(a) Fermented Products Wastewater Treatment Plant

With the exception of tanks TK101 through TK104 and TK120, the emission units associated with the fermented products wastewater treatment plant are “insignificant activities” as defined in 326 IAC 2-7-1(21). TK101 through TK104 and TK120 are not insignificant activities because each tank has potential total reduced sulfur emissions greater than 5 tons per year.

Federal Rule Applicability

(a) Fermented Products Wastewater Treatment Plant

NSPS 40 CFR Part 60 Subpart Kb (New Source Performance Standard for Volatile Organic Liquid Storage Vessels) – The tank emission units associated with the fermented products wastewater treatment plant are not subject to Subpart Kb because they were all installed prior to the July 23, 1984 rule applicability date and have not been modified since that date.

NESHAP 40 CFR Part 63 Subpart GGG (National Emissions Standards for Hazardous Air Pollutants for Pharmaceuticals Production) - The emission units associated with the FP support operations are not subject to 40 CFR 63, Subpart GGG (Pharmaceutical MACT Standards) because these emission units do not process, use, or produce hazardous air pollutant (HAP) emissions in excess of 50 ppmv pursuant to 40 CFR 63.1251 (Process Vent Definition).

(b) Fermented Products Wastewater Sludge Management

NSPS 40 CFR Part 60 Subpart Kb (New Source Performance Standard for Volatile Organic Liquid Storage Vessels) – The bio-solids storage tanks are not subject to 40 CFR Part 60 Subpart Kb because they have individual capacities greater than 151 cubic meters and store a liquid with a maximum true vapor pressure less than 3.5 kPa (the bio-solids have a vapor pressure of 2.34 kPa at 20^0C). [40 CFR 60.110b(b)]

NESHAP 40 CFR Part 63 Subpart GGG (National Emissions Standards for Hazardous Air Pollutants for Pharmaceuticals Production) - The emission units associated with the FP support operations are not subject to Subpart GGG because these emission units do not process, use, or produce hazardous air pollutant (HAP) emissions in excess of 50 ppmv pursuant to 40 CFR 63.1251 (Process Vent Definition).

State Rule Applicability

(a) Fermented Products Wastewater Treatment Plant

326 IAC 2-2 (Prevention of Significant Deterioration, PSD) - The requirements of PSD for hydrogen sulfide and total reduced sulfur compounds do not apply to tanks 101, 102, 103, and 104 because these tanks were installed in 1960, prior to the PSD regulations. Hydrogen sulfide and total reduced sulfur emissions are less than 10 tons per year for all other equipment installations after 1977.

326 IAC 4-2 (Incinerators) - The thermal research foul air incinerator (T174) is not subject to the requirements of 326 IAC 4-2 because it does not incinerate solid or liquid waste.

326 IAC 8-1-6 (VOC BACT Rule) - The FP wastewater treatment plant is not subject to the state BACT requirements under 326 IAC 8-1-6 because the equipment was installed prior to the 1980 rule applicability date or because the VOC emissions associated with each emission unit or emission project are less than 25 tons per year.

326 IAC 8-5-3 (Synthesized Pharmaceutical Manufacturing Operations) - The fermentation and purification operations do not manufacture pharmaceutical products by chemical synthesis. Therefore, this equipment is not subject to this requirement.

(b) Fermented Products Wastewater Sludge Management

326 IAC 2-2 (Prevention of Significant Deterioration, PSD) - The requirements of PSD for hydrogen sulfide, total reduced sulfur, and reduced sulfur compounds do not apply to bio-solids storage tanks because CP 157-4363, Amendment 157-8953 and minor source Modification 157-24812-00006 establish enforceable emission limits and control requirements.

The PSD significant threshold levels for each pollutant (hydrogen sulfide, total reduced sulfur and reduced sulfur) is 10 tons per year, while the emission limitation in the existing construction permits and amendment is 4 tons per year. The outlet concentration limit has been revised in the Title V permit as follows to reflect an emission limit that shall not equal or exceed 10 tons TRS per year:

Max Gas Flow Rate	=	800 acfm
TRS Emission Limit	<	10 tpy, 2.28 lb/hr
Conversion Factor	=	28.3 liters/cf
Conversion Factor	=	454 grams/lb
Conversion Factor	=	106 ug/g
Max Outlet TRS Conc	<	(hourly emission rate) / (gas flow rate)
		< (2.28 lb/hr x 454x106 ug/lb) / (800 acfm x 28.3 l/cf x 60 min/hr)
		< 762 ug/l

The hydrogen sulfide and reduced sulfur compounds are a subset of total reduced sulfur. Therefore, compliance with the TRS emission limit will satisfy compliance with the hydrogen sulfide and reduced sulfur compound emission limits.

The control requirements established in the existing permit and amendment have also been revised in the Title V permit to eliminate redundancy and unnecessary monitoring tasks. Because the air flowrate and pressure drop across the iron sponge reactor are both used to demonstrate that the bio-solids tanks are exhausting to the iron sponge and that the iron sponge is operating properly, only one of these monitoring parameters is necessary. The Title V permit only requires that the pressure drop be measured once per day.

326 IAC 8-1-6 (VOC BACT Rule) - The storage tanks are not subject to the state BACT requirements under 326 IAC 8-1-6 because the potential VOC emissions are less than the applicability threshold level of 25 tons per year.

326 IAC 8-5-3 (Synthesized Pharmaceutical Manufacturing Operations) - The fermentation and purification operations do not manufacture pharmaceutical products by chemical synthesis. Therefore, the fermented products support equipment is not subject to this requirement.

Compliance Requirements

Wastewater Sludge Management Operations

The following compliance activities are required for the iron sponge reactor associated with the wastewater sludge management operations:

1. The TRS outlet concentration of the iron sponge shall be measured and analyzed once per calendar week.

2. The pressure drop across the iron sponge reactor shall be monitored once per day. The reading should be within a pressure drop range of 0.2 – 2.0 inches water column.

D.6: BCM Operations

Background and Description

The bulk chemical manufacturing (BCM) component of Tippecanoe Laboratories currently consists of Buildings T27, T29, T31, T31A, T99, and T100. Pharmaceutical products are manufactured in bulk scale in all of these buildings using batch type processing operations. Miscellaneous organic chemical manufacturing may also be conducted in these buildings using the same equipment and same types of raw materials and may be either batch or continuous type processing operations. Historically, Buildings T31 and 31A have been referred to as the "pilot plant". While generally the equipment in T31/31A is used for scale-up development of new pharmaceutical products and production of clinical trial materials, manufacturing of product material for sale can occur in these buildings, so Buildings T31/31A have been included in the rule applicability determination.

Types of Emission Units and Pollution Control Equipment

A wide variety of process equipment, also referred to as process vents, can be used in a number of different manufacturing operations including distillations, heating, cooling, chemical reactions, filtration, cetrifugation, and drying. Centrifuges are used to separate solids and mother liquor for both intermediate and final separations. Dryers are used to remove any residual solvent from the centrifuged wet cake. The following types of process vents, controlled by two Regenerative Thermal Oxidizers equipped with caustic scrubbing systems (RTO system), are used in BCM operations:

<u>Process Tanks</u>
These tanks may be used in the production of bulk pharmaceutical drugs, miscellaneous organic chemical manufacturing, or synthetic organic chemical manufacturing (which is included as an alternative operating scenario). Some of the tanks in the manufacturing areas are not as versatile as the general process tanks because they do not have jackets supplying heating/cooling media (e.g., ethylene glycol) needed to perform heating/cooling process activities. Process tanks without jackets include charge tanks (used to prepare solutions that will be transferred to a general process tank for further processing) and accumulator tanks (used to collect condensate from condensers on stills and dryers). Depending on process chemistry, process scrubbers and process condensers may be required in the manufacture of certain products. The process scrubber systems and condenser operations are an integral part of the process tanks.

<u>Centrifuges</u>
There are typically two types of centrifuges in the BCM operations, basket and Heinkel centrifuges. The centrifuges separate solids and mother liquor for both intermediate and final separations. Centrifugation can be broken down into steps that include loading the slurry, spin cycles to separate the liquid from the solid wash cycles to clean impurities from crystals, and unloading the crystals.

<u>Dryers</u>
There are various types of dryers used in the BCM operations. Rotary vacuum dryers (RVDs) are most common, but filter/dryers, pan dryers, vacuum shelf dryers, and fluid bed dryers are also used. Some dryers are portable and may be moved between buildings.

<u>General Activities</u>
General activities such as open manway operations, charging a liquid from a drum to a tank, centrifuge emptying operations, drum filling operations, or loading wetcake into driers are also defined as process

vents. Individual identification of these activities are not listed in the description tables given they are not stationary or continually change.

Insignificant Activities

The general activities associated with the BCM operations, such as open manway operations, charging a liquid from a drum to a tank, centrifuge emptying operations, drum filling operations, or loading wetcake into driers, are considered insignificant activities pursuant to 326 IAC 2-7-1(21).

Federal Rule Applicability

BCM Operations are subject to the two federal Clean Air Act requirements listed below. These requirements are described in greater detail in the “Multiple Requirement Streamlining Proposal and BACT Determination” topic within this section.

Applicable federal requirements:

1. 40 CFR Part 63 Subpart GGG, Pharmaceutical Production (Pharma) MACT
2. 40 CFR Part 63 Subpart FFFF, Miscellaneous Organic Chemical Manufacturing NESHAP (MON)*

*The MON applies upon operation of a miscellaneous organic chemical manufacturing process unit (MCPU).

An alternative operating scenario is included in the permit for BCM process vents that trigger applicability of certain provision of the NESHAP from the Synthetic Organic Chemical Manufacturing Industry (herein referred to as the HON), 40 CFR Part 63 Subpart F (which incorporates Subparts G and H by reference).

State Rule Applicability

BCM Operations are subject to the PSD Best Available Control Technology (BACT) Requirements [326 IAC 2-2] and the Synthetic Pharmaceutical RACT rule [326 IAC 8-5-3]. These requirements are described in greater detail in the “Multiple Requirement Streamlining Proposal and BACT Determination” topic within this section.

Testing and Compliance Requirements

The testing and compliance requirements for BCM Operations are described in the streamlining table below.

Multiple Requirement Streamlining and BACT Determination

The purpose of this streamlining is to demonstrate that the requirements of RACT Rule for Synthesized Pharma Manufacturing [326 IAC 8-5-3] and flexible PSD permit requirements can be streamlined into the more stringent applicable requirements of the Pharma MACT [40 CFR Part 63 Subpart GGG] and MON [40 CFR Part 63 Subpart FFFF]. IDEM has determined BACT for BCM Operations is equivalent to the emission limits, control requirements, performance requirements, and work practices from these rules.

With the exception of the process vent hydrogen halide and halogen (HX) emission standards, in most cases, the Pharma MACT and MON requirements for process vents are identical. Based on this similarity, the flexible permit requirements identify the Pharma MACT requirements as the streamlined requirements. In any cases in which the MON requirements are more stringent than the Pharma MACT, the requirements of the MON are identified as the streamlined requirement.

BCM Operations – Alternative Operating Scenarios

Because the MON HX standards differ from the Pharma MACT, and Evonik may or may not generate halogenated Group 1 process vents subject to the MON, Evonik is including an alternative operating scenario to account for the potential generation of a MON halogenated Group 1 process vent. The control requirements for such process vents are described in the RTO Operations section of the permit.

The HON only requires controls on continuous Group 1 process vents (generated from the manufacture of a HON-subject chemical). Currently, Evonik only operates batch process vents. However, Evonik is including an alternative operating scenario to account for the possibility that the site could generate a HON Group 1 process vent. The control requirements for such process vents are described in the RTO Operations section of the permit.

The following table summarizes the requirements for the BCM Operations.

Streamlining Table for BCM Operations

HX = Hydrogen Halide and Halogen

BCM Operations Standards	Applicable Rules				Streamlined Applicable Requirements	Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**PSD BACT Standards (326 IAC 2-2-3)**		**MON (40 CFR Part 63 Subpart FFFF)**	**HON (40 CFR Part 63 Subparts F, G, H)**
Applicability							
BCM Process Vents	Potential VOC emissions ≥ 15 lb/day [326 IAC 8-5-3(a)]	Process vents with ≥ 50 ppm HAP [40 CFR 63.1251]	• Continuous process vents > 0.005 wt% total HAP* [40 CFR 63.2550, 63.107(d)] • Batch process vents containing ≥ 50 ppm HAP or unit operations with ≥ 200 lb/yr HAP* [40 CFR 63.2550] *Does not include MON halogenated vent streams, which are included in the Alternative Operating Scenarios portion of this table.	Process vents > 15 lbs/day VOC or ≥ 50 ppm VOC	• Process vents ≥ 50 ppm HAP and /or ≥ 50 ppm VOC (excluding MON halogenated vent streams) or • Process vents > 15 lbs/day VOC	Process vents ≥ 0.45 kg/hr halogen atoms in organic compounds [40 CFR 63.2550]	• Continuous process vents > 0.005 wt% total organic HAP and [40 CFR 63.107(d)] • Process vents ≥ 0.45 kg/hr halogen atoms in organic compounds [40 CFR 63.111]
Emission Limits, Control Requirements, Performance Requirements, and Work Practices							
TOC Emission Limits and Standards	These rules require that TOC BCM operation emissions above the applicability threshold be routed to a control device. Details described in RTO control device section.		This rule requires that TOC BCM operation emissions above the Group 1 applicability threshold be routed to a control device [Group 1 continuous process vents are those where flow rate is ≥0.005 std m3/min and total resource effectiveness (TRE) index value is ≤ 1.9 (existing src); Group 1 batch process vent are those where collective uncontrolled organic HAP* emissions from all batch process vents are ≥ 10,000 lb/yr (existing src); 40 CFR 63.2550(i)]. Details described in RTO control device section.	TOC BCM operation emissions above the applicability threshold must be routed to a control device. Details described in RTO control device section		N/A; Alternative Operating Scenario is for HX Standard only	This rule requires that TOC BCM operation emissions above the Group 1 applicability threshold be routed to a control device [Group 1 continuous process vents are those where vent flow ≥ 0.005 std m3/min, total organic HAP ≥ 50 ppmv, and TRE ≤ 1.0 (existing src); 40 CFR 63.111, 63.113]. Details described in RTO control device section.
TOC Emission Limits and	No control required if below applicability	No control required if: • Uncontrolled process	• No control required if continuous process vent	• Production equipment exhaust systems containing <50 ppm HAP or		N/A; Alternative Operating Scenario	No control required if not a Group 1

BCM Operations Standards	**Applicable Rules**				**Streamlined Applicable Requirements**	**Alternative Operating Scenarios**	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**PSD BACT Standards (326 IAC 2-2-3)**		**MON (40 CFR Part 63 Subpart FFFF)**	**HON (40 CFR Part 63 Subparts F, G, H)**
Standards not requiring control device	threshold levels described above	vents within a single process < 900 kg HAP (TOC+HX) and • Combined Uncontrolled Processes < 1800 kg HAP [40 CFR 63.1254(a)(3)]	flow < 0.005 std m^3/min or TRE > 1.9 at an existing source; • No control required if total process batch organic HAP emissions < 10,000 lb/yr at an existing source [40 CFR 63.2550 and MON Tables 1-3]	actual emissions less than 33 lb/day VOC. • Continuous process vents: No control required if continuous process vent flow < 0.005 std m^3/min or TRE > 1.9 (existing source) • Batch process vents: No control required if: • Uncontrolled process vents within a single process < 900 kg HAP (TOC+HX) and • Combined Uncontrolled Processes < 1800 kg HAP		is for HX Standard only	continuous process vent [vent flow <0.005 std m3/min, total organic HAP <50 ppmv, or TRE > 1.0 (existing src); 40 CFR 63.111, 63.113]
HX Emission Limits and Standards	N/A	This rule requires that BCM operation emissions above the applicability threshold be routed to a control device. Details described in RTO control device section.	These are addressed in the Alternative Operating Scenarios portion of this table.	BCM operation emissions greater than applicability threshold must be routed to the RTO control system via a closed vent system. Control device standards and limits addressed in RTO control device section.		Group 1 process vents on processes with ≥ 1,000 lb/yr hydrogen halide and halogen HAP process vent emissions [40 CFR 63.2455 and MON Tables 1-3] must be routed to control device. Details described in RTO control device section.	Group 1 continuous process vents [vent flow ≥ 0.005 std m3/min, total organic HAP ≥ 50 ppmv, and TRE ≤ 1.0 (existing src); 40 CFR 63.111, 63.113] must be routed to control device. Details described in RTO control device section.
HX Emission Limits and Standards not requiring control device	N/A	No control required if: • Uncontrolled process vents within a single process < 900 kg HAP (TOC+HX) and • Combined Uncontrolled Processes < 1800 kg HAP [63.1254(a)(3)]	These are addressed in the Alternative Operating Scenarios portion of this table.	No control required if: • Uncontrolled process vents within a single process < 900 kg HAP (TOC+HX) and • Combined Uncontrolled Processes < 1800 kg HAP		No control required for process vents that are not Group 1 and are on processes with < 1,000 lb/yr HX HAP process vent emissions [40 CFR 63.2455 and MON Tables 1-3]	No control required for process vents that are not Group 1 continuous [40 CFR 63.111, 63.113]
Heat Exchange System Requirement	N/A	• Meet exemption criteria in 63.104(a) or • Monitor and repair	• Meet exemption criteria in 63.104(a) pr • Monitor and repair	• Meet exemption criteria in 63.104(a) or • Monitor and repair according to 63.104(b) – (f)		N/A	Note: The HON Heat Exchange System requirements are included in the

BCM Operations Standards	**Applicable Rules**				**Streamlined Applicable Requirements**	**Alternative Operating Scenarios**	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**PSD BACT Standards (326 IAC 2-2-3)**		**MON (40 CFR Part 63 Subpart FFFF)**	**HON (40 CFR Part 63 Subparts F, G, H)**
		according to 63.104(b) – (f) or • Meet cGMP requirements of 21 CFR Part 211 [40 CFR 63.1252(c)]	according to 63.104(b) – (f) [40 CFR 63.2490 and MON Table 10]				streamlined provision. • Meet exemption criteria in 63.104(a) or • Monitor and repair according to 63.104(b) – (f)
Work Practice Standards - General	• Enclose centrifuges, rotary vacuum filters and other filters with exposed surfaces [326 IAC 8-5-3(b)(4)] and • Keep covers in place for inprocess tanks [326 IAC 8-5-3(b)(5)]	N/A	N/A	• Enclose centrifuges, rotary vacuum filters and other filters with exposed surfaces [326 IAC 8-5-3(b)(4)] and • Keep covers in place for inprocess tanks [326 IAC 8-5-3(b)(5)]		N/A	N/A
Work Practice Standards - Closed Vent System	Closed vent system requirements are addressed in the RTO section.						
Fugitive Emission Standards	Fugitive emission standards are addressed in the LDAR sections.						
Compliance demonstration methods							
TOC and HX Continuous Emissions Monitoring System (CEMS) Requirements	The control device compliance requirements are addressed in the RTO section.						
TOC and HX Continuous Monitoring System (CMS) Requirements	The control device compliance requirements are addressed in the RTO section.						
TOC and HX Stack Testing Requirements	The control device compliance requirements are addressed in the RTO section.						

BCM Operations Standards	Applicable Rules				Streamlined Applicable Requirements	Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**PSD BACT Standards (326 IAC 2-2-3)**		**MON (40 CFR Part 63 Subpart FFFF)**	**HON (40 CFR Part 63 Subparts F, G, H)**
Record Keeping and Reporting							
Record keeping	None	• For process vents not requiring control device, records of mass limits [40 FR 63.1259(b)(5(ii)] • For heat exchangers, either physical integrity records or monitor and repair records required by 40 CFR 63.104(f)(1) if not meeting exemption criteria • Records of compliance with control device standards addressed in RTO section • Records of LDAR standards addressed in LDAR sections	• Records of compliance with control device standards addressed in RTO section • Records LDAR standards are addressed in LDAR sections • For heat exchangers, monitor and repair records required by 40 CFR 63.104(f)(1) if not meeting exemption criteria	• Records to demonstrate compliance with short term BACT limits addressed in RTO section • Records to demonstrate compliance with emission caps addressed in Change Management section • Records of LDAR standards addressed in LDAR sections	• For process vents not requiring control device, records of mass limits • For heat exchangers, monitor and repair records required by 40 CFR 63.104(f)(1) if not meeting exemption criteria • Records of compliance with control device standards addressed in RTO section • Records of LDAR standards addressed in LDAR sections	• Records of compliance with HX control device standards addressed in RTO section	• Records of compliance with control device standards addressed in RTO section • Records LDAR standards are addressed in LDAR section
Reporting	None	• The control device reporting requirements are addressed in the RTO section. • The LDAR reporting requirements are addressed in the LDAR section.					

1. The MON applies upon operation of a miscellaneous organic chemical manufacturing process unit (MCPU).

D.7: BCM Support - Solvent Recovery Operations

Background and Description

The Solvent Recovery operations at Tippecanoe Laboratories consist of Buildings T19, T52, T61 and T127. Spent solvent from both onsite BCM operations and offsite operations are recovered in these buildings.

Types of Emission Units and Pollution Control Equipment

Equipment used in Solvent Recovery operations is also referred to as process vents. Typical solvent recovery equipment includes distillation equipment, evaporators, steam strippers, wash columns, and receivers. Emissions associated with the distillation columns, evaporators, steam strippers, and wash columns occur during the initial startup. Once the inert gas initially present in the equipment is purged from the system and the equipment is operating at steady state, no emissions occur. Emissions from the receivers occur as they are filled. The solvent recovery equipment currently in operation is controlled by the T79 fume incinerator system followed by a caustic scrubbing system. Solvent recovery equipment currently not in operation must be connected to either the RTO system or T79 fume incinerator system prior to operation.

Insignificant Activities

None of the BCM Support Solvent Recovery equipment is considered an insignificant activity pursuant to 326 IAC 2-7-1(21)(E).

Federal Rule Applicability

BCM Support – Solvent Recovery Operations are subject to the four federal Clean Air Act requirements listed below. These requirements are described in greater detail in the “Multiple Requirement Streamlining Proposal and BACT Determination” topic within this section.

Applicable federal requirements:

1. 40 CFR Part 63 Subpart GGG, Pharmaceutical Production (Pharma) MACT
2. 40 CFR Part 63 Subpart FFFF, Miscellaneous Organic Chemical Manufacturing NESHAP (MON)*
3. 40 CFR Part 63 Subpart DD, Off-site Waste and Recovery Operations (OSWRO) MACT
4. 40 CFR Part 63 Subpart F (which incorporates Subparts G and H by reference), NESHAP from the Synthetic Organic Chemical Manufacturing Industry (herein referred to as the HON)**

*This regulation applies if an IDS accepts Group 1 wastewater from a miscellaneous organic chemical manufacturing process unit (MCPU).

**This regulation applies if an IDS accepts Group 1 wastewater from a chemical organic manufacturing process unit (CMPU).

State Rule Applicability

BCM Support – Solvent Recovery Operations are subject to the PSD Best Available Control Technology (BACT) Requirements [326 IAC 2-2] and the Synthetic Pharmaceutical RACT rule [326 IAC 8-5-3]. These requirements are described in greater detail in the “Multiple Requirement Streamlining Proposal and BACT Determination” topic within this section.

Testing and Compliance Requirements

The testing and compliance requirements for BCM Support – Solvent Recovery Operations are described in the streamlining table below.

Multiple Requirement Streamlining and BACT Determination

The purpose of this streamlining is to demonstrate that the requirements of RACT Rule for Synthesized Pharma Manufacturing [326 IAC 8-5-3], OSWR MACT [40 CFR Part 63 Subpart DD] and flexible PSD permit requirements can be streamlined into the more stringent applicable requirements of the Pharma MACT [40 CFR Part 63 Subpart GGG] and MON [40 CFR Part 63 Subpart FFFF]. IDEM has determined BACT BCM Support – Solvent Recovery Operations is equivalent to the emission limits, control requirements, performance requirements, and work practices of these rules.

With the exception of the process vent hydrogen halide and halogen (HX) emission standards, in most cases, the Pharma MACT and MON requirements for process vents are identical. Based on this similarity, the flexible permit requirements identify the Pharma MACT requirements as the streamlined requirements. In any cases in which the MON requirements are more stringent than the Pharma MACT, the requirements of the MON are identified as the streamlined requirement.

BCM Support – Solvent Recovery Operations – Alternative Operating Scenario

Some equipment in the Solvent Recovery Operations area is currently out of service. Because the equipment may be vented to either the T79 or RTO systems upon being put back into service, Evonik has included an alternative operating scenario to reflect these options.

The following table summarizes the requirements for the BCM Operations.

Streamlining Table for BCM Solvent Recovery Operations

HX = Hydrogen Halide and Halogen

BCM Solvent Recovery Operations Standards	**Applicable Rules**						**Streamlined Applicable Requirements**
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**OSWRO MACT (40 CFR 63 Subpart DD)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**PSD BACT Standards (326 IAC 2-2-3)**	
Applicability							
BCM Solvent Recovery Process Vents	Potential VOC emissions ≥ 15 lb/day [326 IAC 8-5-3(a)]	Any new/existing/ modified process vent containing offsite waste with a VOHAP content of ≥ 500 ppmw [63.680(b)(1) and 63.683(b)(1)(iii)]	Process vents with ≥ 50 ppm HAP [40 CFR 63.1251]	• Continuous process vents > 0.005 wt% total HAP [40 CFR 63.2550, 63.107(d)] • Batch process vents containing ≥ 50 ppm HAP or unit operations with ≥ 200 lb/yr HAP* [40 CFR 63.2550] • Process vents ≥ 0.45 kg/hr halogen atoms in organic compounds [40 CFR 63.2550]	• Continuous process vents > 0.005 wt% total organic HAP and [40 CFR 63.107(d)] • Process vents ≥ 0.45 kg/hr halogen atoms in organic compounds [40 CFR 63.111]	Process vents > 15 lbs/day VOC or ≥ 50 ppm VOC	• Process vents ≥ 50 ppm HAP and /or ≥ 50 ppm VOC (excluding MON halogenated vent streams) or • Process vents > 15 lbs/day VOC
Emission limits, control requirements, performance requirements, and work practices							
TOC Emission Limits and Standards	These rules require that TOC BCM Solvent Recovery operation emissions above the applicability threshold be routed to a control device. Details described in T79 control device section.			This rule requires that TOC BCM Solvent Recovery operation emissions above the Group 1 applicability threshold be routed to a control device [Group 1 continuous process vents are those where flow rate is ≥0.005 std m3/min and total resource effectiveness (TRE) index value is ≤ 1.9 (existing src); Group 1 batch process vent are those where collective uncontrolled organic HAP* emissions from all batch process vents are ≥ 10,000 lb/yr (existing src); 40 CFR 63.2550(i)]. Details described in T79 control device section.	This rule requires that TOC BCM Solvent Recovery operation emissions above the Group 1 applicability threshold be routed to a control device [Group 1 continuous process vents are those where vent flow ≥ 0.005 std m3/min, total organic HAP ≥ 50 ppmv, and TRE ≤ 1.0 (existing src); 40 CFR 63.111, 63.113]. Details described in T79 control device section.	TOC BCM Solvent Recovery operation emissions above the applicability threshold must be routed to a control device. Details described in T79 control device section (or RTO control device section per alternative operating scenario)	
TOC Emission Limits and Standards not requiring control	No control required if below applicability threshold levels described above		No control required if: • Uncontrolled process vents within a single process < 900 kg HAP (TOC+HX) and • Combined	• No control required if continuous process vent flow < 0.005 std m^3/min or TRE > 1.9 at an existing source; • No control required if total process batch organic HAP emissions < 10,000 lb/yr at an	No control required if not a Group 1 continuous process vent [vent flow <0.005 std m3/min, total organic HAP <50 ppmv, or TRE > 1.0 (existing src); 40 CFR 63.111,	• Production equipment exhaust systems containing <50 ppm HAP or actual emissions less than 33 lb/day VOC. • Continuous process vents: No control required if continuous process vent flow < 0.005 std m^3/min or TRE > 1.9	

BCM Solvent Recovery Operations Standards	Applicable Rules						Streamlined Applicable Requirements
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	OSWRO MACT (40 CFR 63 Subpart DD)	Pharma MACT (40 CFR Part 63 Subpart GGG)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)	PSD BACT Standards (326 IAC 2-2-3)	
device			Uncontrolled Processes < 1800 kg HAP [40 CFR 63.1254(a)(3)]	existing source [40 CFR 63.2550 and MON Tables 1-3]	63.113]	(existing source) • Batch process vents: No control required if: • Uncontrolled process vents within a single process < 900 kg HAP (TOC+HX) and • Combined Uncontrolled Processes < 1800 kg HAP	
HX Emission Limits and Standards	N/A	These rules require that BCM Solvent Recovery operation emissions above the applicability threshold be routed to a control device. Details described in T79 control device section.		Group 1 process vents on processes with ≥ 1,000 lb/yr hydrogen halide and halogen HAP process vent emissions [40 CFR 63.2455 and MON Tables 1-3] must be routed to control device. Details described in T79 control device section.	Group 1 continuous process vents [vent flow ≥ 0.005 std m3/min, total organic HAP ≥ 50 ppmv, and TRE ≤ 1.0 (existing src); 40 CFR 63.111, 63.113] must be routed to control device. Details described in T79 control device section.	BCM Solvent Recovery operation emissions greater than applicability threshold must be routed to the T79 control system via a closed vent system. Control device standards and limits addressed in T79 control device section.	
HX Emission Limits and Standards not requiring control device	N/A	None specified	No control required if: • Uncontrolled process vents within a single process < 900 kg HAP (TOC+HX) and • Combined Uncontrolled Processes < 1800 kg HAP [63.1254(a)(3)]	No control required for process vents that are not Group 1 and are on processes with < 1,000 lb/yr HX HAP process vent emissions [40 CFR 63.2455 and MON Tables 1-3]	No control required for process vents that are not Group 1 continuous [40 CFR 63.111, 63.113]	No control required if: • Uncontrolled process vents within a single process < 900 kg HAP (TOC+HX) and • Combined Uncontrolled Processes < 1800 kg HAP	
Heat Exchange System Require-ment	N/A	N/A	• Meet exemption criteria in 63.104(a) or • Monitor and repair according to 63.104(b) – (f) or • Meet cGMP requirements of 21 CFR Part 211 [40 CFR 63.1252(c)]	• Meet exemption criteria in 63.104(a) pr • Monitor and repair according to 63.104(b) – (f) [40 CFR 63.2490 and MON Table 10]	• Meet exemption criteria in 63.104(a) or • Monitor and repair according to 63.104(b) – (f)	• Meet exemption criteria in 63.104(a) or • Monitor and repair according to 63.104(b) – (f)	
Work Practice	• Enclose centrifuges,	N/A	N/A	N/A	N/A	• Enclose centrifuges, rotary vacuum filters and other filters with exposed	

BCM Solvent Recovery Operations Standards	Applicable Rules						Streamlined Applicable Requirements
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**OSWRO MACT (40 CFR 63 Subpart DD)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**PSD BACT Standards (326 IAC 2-2-3)**	
Standards - General	rotary vacuum filters and other filters with exposed surfaces [326 IAC 8-5-3(b)(4)] and • Keep covers in place for inprocess tanks [326 IAC 8-5-3(b)(5)]					surfaces [326 IAC 8-5-3(b)(4)] and • Keep covers in place for inprocess tanks [326 IAC 8-5-3(b)(5)]	
Work Practice Standards - Closed Vent System	Closed vent system requirements are addressed in the T79 section.						
Fugitive Emission Standards	**Fugitive emission standards are addressed in the LDAR sections.**						
Compliance demonstration methods							
TOC and HX CEMS require-ments	The control device compliance requirements are addressed in the T79 section.						
TOC and HX CMS require-ments	The control device compliance requirements are addressed in the T79 section.						
TOC and HX stack testing require-ments	The control device compliance requirements are addressed in the T79 section.						
Record keeping and reporting							
Record	None	• Records of	• For process vents not	• Records of compliance with	• Records of	• Records to	• For process vents

BCM Solvent Recovery Operations Standards	Applicable Rules						Streamlined Applicable Requirements
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	OSWRO MACT (40 CFR 63 Subpart DD)	Pharma MACT (40 CFR Part 63 Subpart GGG)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)	PSD BACT Standards (326 IAC 2-2-3)	
keeping		compliance with control device standards addressed in T79 section • Records of LDAR standards addressed in LDAR sections	requiring control device, records of mass limits [40 FR 63.1259(b)(5(ii)] • For heat exchangers, either physical integrity records or monitor and repair records required by 40 CFR 63.104(f)(1) if not meeting exemption criteria • Records of compliance with control device standards addressed in T79 section • Records of LDAR standards addressed in LDAR sections	control device standards addressed in T79 section • Records LDAR standards are addressed in LDAR sections • For heat exchangers, monitor and repair records required by 40 CFR 63.104(f)(1) if not meeting exemption criteria	compliance with control device standards addressed in T79 section • Records LDAR standards are addressed in LDAR section	demonstrate compliance with short term BACT limits addressed in T79 section • Records to demonstrate compliance with emission caps addressed in Change Management section • Records of LDAR standards addressed in LDAR sections	not requiring control device, records of mass limits • For heat exchangers, monitor and repair records required by 40 CFR 63.104(f)(1) if not meeting exemption criteria • Records of compliance with control device standards addressed in T79 section • Records of LDAR standards addressed in LDAR sections
Reporting	None	• The control device reporting requirements are addressed in the T79 section. • The LDAR reporting requirements are addressed in the LDAR section.					

1. The MON applies if an IDS accepts Group 1 wastewater from a miscellaneous organic chemical manufacturing process unit (MCPU).
2. The HON applies if an IDS accepts Group 1 wastewater from a chemical organic manufacturing process unit (CMPU).

D.8: BCM and BCM Support Operations - Individual Drain Systems (IDSs)

Background and Description

Bulk chemical manufacturing (BCM) individual drain systems (IDSs) serve the BCM operations and BCM solvent recovery operations at Tippecanoe Laboratories. Individual drain systems supporting Fermented Products operations are outside the scope of this section, because they do not contain affected wastewater subject to the Pharma MACT (40 CFR Part 63 Subpart GGG), Group 1 wastewater subject to the MON (40 CFR Part 63 Subpart FFFF), Group 1 wastewater subject to the HON (40 CFR Part 63 Subparts F and G), do not serve offsite waste and recovery operations subject to 40 CFR Part 63 Subpart DD and are not part of the flexible PSD permit scope. Individual drain systems are stationary systems used to convey waste streams to a waste management unit. Segregated stormwater sewer systems designed and operated for the sole purpose of collecting rainfall-runoff at a facility are not considered IDSs.

Types of Emission Units and Pollution Control Equipment

BCM IDSs operated above the applicability thresholds established in the streamlining table below shall be routed to either the RTO or T79 fume incinerator at all times waste material is in the BCM IDS, unless it is necessary to use the opening for sampling or removal of material, or for equipment inspection, maintenance, or repair.

Insignificant Activities

The BCM IDSs qualify as insignificant activities pursuant to 326 IAC 2-7-1(21) because VOC emissions are equal to or less than 3 pounds per hour or 15 pounds per day.

Federal Rule Applicability

IDSs in the BCM areas are subject to the four federal Clean Air Act requirements listed below. These requirements are described in greater detail in the “Multiple Requirement Streamlining Proposal and BACT Determination” topic within this section.

Applicable federal requirements:

1. 40 CFR Part 63 Subpart GGG, Pharmaceutical Production (Pharma) MACT
2. 40 CFR Part 63 Subpart FFFF, Miscellaneous Organic Chemical Manufacturing NESHAP (MON)*
3. 40 CFR Part 63 Subpart DD, Off-site Waste and Recovery Operations (OSWRO) MACT
4. 40 CFR Part 63 Subpart F (which incorporates Subparts G and H by reference), NESHAP from the Synthetic Organic Chemical Manufacturing Industry (herein referred to as the HON)**

*This regulation applies if an IDS accepts Group 1 wastewater from a miscellaneous organic chemical manufacturing process unit (MCPU).

**This regulation applies if an IDS accepts Group 1 wastewater from a chemical organic manufacturing process unit (CMPU).

Other Federal Requirements

40 CFR Part 60 Subpart Kb (NSPS for Volatile Organic Liquid Storage Vessels) – The control requirements of this rule apply to storage vessels with a capacity greater than or equal 75 cubic meters (m^3).The capacity of each BCM individual drain system is below the applicability threshold levels; therefore, the requirements of this rule do not apply to the individual drain systems.

State Rule Applicability

The IDS VOHAP/VOC emissions in BCM areas are subject to the PSD Best Available Control Technology (BACT) Requirements [326 IAC 2-2]. These requirements are described in greater detail in the "Multiple Requirement Streamlining Proposal and BACT Determination" topic within this section.

Other State Requirements

326 IAC 8-5-3 (Synthetic Pharmaceutical RACT Rule) – The control requirements of 326 IAC 8-5-3 do not apply to the BCM individual drain systems because potential to emit from each individual drain system is less than 15 pounds per day.

Testing and Compliance Requirements

The testing and compliance requirements for the BCM individual drain systems are described in the streamlining table below.

Multiple Requirement Streamlining and BACT Determination

The purpose of this streamlining is to demonstrate that the requirements of 40 CFR Part 63, Subpart DD (the National Emission Standard for Hazardous Air Pollutants, or NESHAP, for offsite waste and recovery operations, or OSWRO) can be streamlined into more stringent applicable IDS requirements found in either 40 CFR Part 63 Subpart GGG (Pharmaceutical Production, or "Pharma" MACT) or FFFF (Miscellaneous Organic Chemical Manufacturing NESHAP (MON) and the flexible PSD permit requirements that will be established in the Title V permit. IDEM has determined BACT for IDSs is equivalent to the emission limits, control requirements, performance requirements, and work practices.

With the exception of determining IDS applicability to the MACT standards, in most cases, the Pharma MACT and MON requirements for IDSs are identical. Additionally, with the exception of the control device standards, which are identified in permit sections D.14 and D.15, the HON IDS standards are identical to the MON and Pharma MACT standards. Based on this similarity, the flexible permit requirements identify the Pharma MACT requirements as the streamlined requirements. In any cases in which the MON or HON requirements are more stringent than the Pharma MACT, the requirements of the MON/HON are identified as the streamlined requirement. For purposes of determining IDS applicability to the MACT standards, Tippecanoe Laboratories incorporated the requirements of the Pharma MACT, MON and HON. Generally, any IDS that accepts wastewater subject to the Pharma MACT also has the ability to accept wastewater subject to the MON or HON, and vice versa.

The following table summarizes the requirements for the BCM IDSs.

Streamlining Table for BCM Individual Drain Systems

BCM IDS Standard	**Applicable Rules**					**Streamlined Applicable Requirements**
	Pharma MACT (40 CFR Part 63 Subpart GGG)	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**PSD BACT Standards (326 IAC 2-2-3)**	
Applicability						
	Affected wastewater or wastewater residuals containing: • Partially soluble HAP annual avg. concentration > 1300 ppmw and total soluble and partially soluble HAP > 0.25 Mg/yr • Partially soluble and/or soluble HAP annual avg. concentration > 5200 ppmw, and total soluble and partially soluble HAP > 0.25 Mg/yr [40 CFR 63.1256(a)(1)(i) and (ii)]	Group 1 Wastewater Stream = Wastewater or wastewater residuals containing : • MON Table 8 partially soluble HAP annual avg. concentration ≥ 10,000 ppmw and total MON Table 8 partially soluble HAP ≥ 200 lb/yr • MON Table 8 partially soluble HAP annual avg. concentration ≥ 1,000 ppmw, and annual average flow ≥ 1 l/min • MON Table 8 partially soluble HAP and MON Table 9 soluble HAP annual avg. concentration ≥ 30,000 ppmv and total MON Table 8 partially soluble HAP and MON Table 9 soluble HAP ≥ 1 ton/yr [40 CFR 63.2550(i), 63.2485(c)] At a new source, Group 1 wastewater stream if contains 40 CFR Part 63 Subpart G Table 8 compounds where annual average flow rate is ≥0.02 liter per minute and the annual average concentration of any individual Table 8 compound is ≥10 ppmw [40 CFR 63.2550(i), 63.132(d)]	Group 1 Wastewater Stream = Wastewater or wastewater residuals containing: • For existing sources: HON Table 9 HAP annual avg. concentration ≥ 10,000 ppmw or soluble HAP annual avg. concentration ≥ 1,000 ppmw, and annual average flow ≥ 10 l/min • For new sources: Any individual HON Table 8 compound annual average concentrations ≥ 10 ppmw and annual average flow ≥ 0.02 l/min [40 CFR 63.132(b), (c)]	IDSs (i.e., transfer systems) containing off-site waste streams of HAP > 1 Mg/year [40 CFR 63.680(b)(1), 63.680(c)(1) and 63.683(c)(2)]	All BCM IDSs containing waste streams of VOC >0.25 Mg/year	For pharmaceutical processes: Follow the IDS applicability criteria in 40 CFR Part 63 Subpart GGG to meet Pharma MACT, OSWRO MACT and PSD. For miscellaneous organic chemical manufacturing processes: Follow IDS applicability criteria in 40 CFR Part 63 Subpart FFFF to meet MON, OSWRO MACT and PSD. For chemical manufacturing processes: Follow IDS applicability criteria in 40 CFR Part 63 Subpart G to meet HON, OSWRO MACT and PSD.
Notable exclusions	IDSs do not include a segregated stormwater sewer system, which is a drain and collection system designed and	IDSs do not include stormwater from segregated sewers. [40 CFR 63.2550]	IDSs do not include stormwater from segregated sewers. [40 CFR 63.100(f)(2)]	IDSs do not include drains and collection systems that are designed and operated for the sole purpose of	Same exclusions allowed by other rules applied to BACT	BCM IDSs do not include drains and collection systems that are designed and operated for the sole

BCM IDS Standard	Applicable Rules					Streamlined Applicable Requirements
	Pharma MACT (40 CFR Part 63 Subpart GGG)	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**PSD BACT Standards (326 IAC 2-2-3)**	
	operated for the sole purpose of collecting rainfall-runoff at the facility, if it is segregated from all other IDSs [40 CFR 63.1251]			collecting rainfall runoff [40 CFR 63.681]		purpose of collecting rainfall runoff
Emission Limits, Control Requirements, Performance Requirements, and Work Practices						
TOC Emission Limits and Standards	**Wastewater streams > 1300 ppmw partially soluble HAP or > 5200 ppmw soluble and/or partially soluble HAP shall comply with the following requirements:** • **Operate and maintain on each opening in the IDS a cover and if vented, route the vapors to a process or through a closed-vent system to a control device [40 CFR 63.1256(e)(1)]** **or** • **Equip each drain with water seal controls or a tightly fitting cap or plug; each junction box shall be equipped with a tightly fitting solid cover kept in place at all times except during inspection and maintenance; sewer lines shall not be open to the atmosphere [40 CFR 63.1256(e)(4)]**	**For Group 1 wastewater streams:** • **Operate and maintain on each opening in the IDS a cover and if vented, route the vapors to a process or through a closed-vent system to a control device [40 CFR 63.2485 and Table 7, 63.136(b)]** **or** • **Equip each drain with water seal controls or a tightly fitting cap or plug; each junction box shall be equipped with a tightly fitting solid cover kept in place at all times except during inspection and maintenance; sewer lines shall not be open to the atmosphere [40 CFR 63.2485 and Table 7, 63.136(e)]**	**For Group 1 wastewater streams:** • **Operate and maintain on each opening in the IDS a cover and if vented, route the vapors to a process or through a closed-vent system to a control device [40 CFR 63.136(b)]** **or** • **Equip each drain with water seal controls or a tightly fitting cap or plug; each junction box shall be equipped with a tightly fitting solid cover kept in place at all times except during inspection and maintenance; sewer lines shall not be open to the atmosphere [40 CFR 63.136(e)]**	**Off-site waste streams at the point of delivery (POD) that contain VOHAP concentration < 500 ppmw:** • No control device or cover is required; perform initial determination of average VOHAP concentration of each off-site material stream using procedures specified in 63.694(B) before waste streams placed in IDS; and review and update determination at least once every 12 months [40 CFR 63.683(b)(1)(iii)] Off-site waste streams at the POD that contain VOHAP concentration ≥ 500 ppmw • **All vented IDSs must be vented to a control device in accordance with 40 CFR 63, Subpart RR [40 CFR 63.689(b)]** • **Maintain IDS covers in closed position at all times except when necessary to**	**BCM IDSs with waste streams at the point of delivery that contain VOHAP concentration < 500 ppmw or VOC concentration < 500 ppmw:** • No control device/cover required if perform initial determination and annual review of average VOHAP concentration below thresholds **BCM IDSs with waste streams at the point of delivery that contain VOHAP concentration ≥ 500 ppmw or VOC concentration ≥ 500 ppmw:** • **Vent IDSs to either the RTO system or T79 fume incinerator system via closed vent system at all times, except for sampling/removal of waste or for equipment inspection, maintenance, or repair.**	**BCM IDSs with waste streams at the point of delivery that contain VOHAP concentration < 500 ppmw or VOC concentration < 500 ppmw:** • No control device/cover required if perform initial determination and annual review of average VOHAP concentration below thresholds **BCM IDSs with waste streams at the point of delivery that contain VOHAP concentration ≥ 500 ppmw or VOC concentration ≥ 500 ppmw:** • **Vent IDSs to either the RTO system or T79 fume incinerator system via closed vent system at all times, except for sampling/removal of waste or for equipment inspection, maintenance, or repair.**

BCM IDS Standard	Applicable Rules					Streamlined Applicable Requirements
	Pharma MACT (40 CFR Part 63 Subpart GGG)	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**PSD BACT Standards (326 IAC 2-2-3)**	
				use opening for sampling or removal, or for equipment inspection, maintenance, or repair [40 CFR 63.689] **or** • **Equip each drain with water seal controls or a tightly fitting cap or plug; each junction box shall be equipped with a tightly fitting solid cover kept in place at all times except during inspection and maintenance; sewer lines shall not be open to the atmosphere [40 CFR 63.689(b), 63.962(b)]**		
Work Practice Standards – Individual Drain System Inspections	**IDS Cover Inspections:** • **Initial/semiannual inspections of each cover for improper work practices/control device failures [40 CFR 63.1256(e)(2), 63.1258(g)(1), and Table 7]; repair leaks within 5/15 days, unless delay of repair allowed [40 CFR 63.1256(e)(3) and 63.1256(i)]** **For IDS covers not under negative pressure:** • **Initial M21 inspection and semiannual visual inspections for**	**IDS Cover Inspections [40 CFR 63.2485 and Table 7]:** • **Initial/semiannual inspections of each cover for improper work practices/control equipment failures [40 CFR 63.136(c) 63.148(b)(3) and Table 11]; repair leaks/failures within 5/15 days, unless delay of repair allowed [40 CFR 63.136(d) and 63.140]** **IDS covers not under negative pressure [40 CFR 63.2485 and Table 7]:** • **Initial and semiannual visual inspections for visible, audible, or olfactory indications of leaks [40 CFR 63.136(b)(1)(i), (b)(4) and 63.148(b)(3)]; repair leaks**	**IDS Cover Inspections:** • **Initial/semiannual inspections of each cover for improper work practices/control equipment failures [40 CFR 63.136(c) 63.148(b)(3) and Table 11]; repair leaks/failures within 5/15 days, unless delay of repair allowed [40 CFR 63.136(d) and 63.140]** **IDS covers not under negative pressure:** • **Initial and semiannual visual inspections for visible, audible, or olfactory indications of leaks [40 CFR 63.136(b)(1)(i), (b)(4) and 63.148(b)(3)]; repair leaks**	IDS Cover Inspections: • Visually inspect IDS covers and closure devices for defects initially and at least once per year [40 CFR 63.964(a)(1)(i)-(iv)]; detected defects must be repaired within 5/15 days, unless delay of repair [40 CFR 63.964(a)(1)(v) and (b)] IDS Cap/Plug Inspections: • **Visual inspection initially and once every year to ensure caps/plugs in place**	**IDS Cover Inspections:** • **Initial/semiannual inspections of each cover for improper work practices/control device failures [40 CFR 63.1256(e)(2), 63.1258(g)(1), and Table 7]; repair leaks within 5/15 days, unless delay of repair allowed [40 CFR 63.1256(e)(3) and 63.1256(i)]** **For IDS covers not under negative pressure:** • **Initial M21 inspection and semiannual visual**	**IDS Cover Inspections:** • **Initial/semiannual inspections of each cover for improper work practices/control device failures [40 CFR 63.1256(e)(2), 63.1258(g)(1), and Table 7]; repair leaks within 5/15 days, unless delay of repair allowed [40 CFR 63.1256(e)(3) and 63.1256(i)]** **For IDS covers not under negative pressure:** • **Initial M21 inspection and semiannual visual inspections for visible, audible, or**

BCM IDS Standard	Applicable Rules					Streamlined Applicable Requirements
	Pharma MACT (40 CFR Part 63 Subpart GGG)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)	OSWRO MACT (40 CFR 63 Subpart DD)	PSD BACT Standards (326 IAC 2-2-3)	
	visible, audible, or olfactory indications of leaks [40 CFR 63.1256(e)(1)(iii) and 63.1258(h)(2)(iii)]; repair leaks within 5/15 days, unless delay of repair allowed [40 CFR 63.1258(h)(4) and (h)(5)]; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.1258(h)(6) and (h)(7)] **IDS covers under negative pressure:** • **Initial M21 or semiannual visual inspections NOT required [40 CFR 63.1256(e)(1)(iv)]** IDS Cap/Plug Inspections: • Visual inspection initially and semiannually to ensure caps/plugs in place and no gaps, cracks, or other holes in cap/ plug; repair leaks within 5/15 days, unless delay of repair allowed [40 CFR 63.1256(e)(5), (6)]	**within 5/15 days, unless delay of repair allowed [40 CFR 63.148(d), (e)]; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.148(g) and (h)]** **IDS covers under negative pressure [40 CFR 63.2485 and Table 7]:** • **Initial or semiannual visual inspections NOT required [40 CFR 63.136(b)(4)]** IDS Cap/Plug Inspections: • **Visual inspection initially and semiannually to ensure caps/plugs in place and no gaps, cracks, or other holes in cap/ plug; repair leaks within 5/15 days, unless delay of repair allowed [40 CFR 63.136(f), (g)]** Sewer line exception: a sewer line connected to drains equipped with water seal controls or a tightly fitting cap or plug may be vented to the atmosphere, provided that the sewer line entrance to the first downstream junction box is water sealed and the seal line vent pipe is designed as specified in 63.136(e)(2)(ii)(A). [40 CFR 63.2485(e)(1)]	**within 5/15 days, unless delay of repair allowed [40 CFR 63.148(d), (e)]; develop plan for Inspection schedule of unsafe or difficult to inspect [40 CFR 63.148(g) and (h)]** **IDS covers under negative:** • **Initial or semiannual visual inspections NOT required [40 CFR 63.136(b)(4)]**	**and no gaps, cracks, or other holes in cap/ plug; repair leaks within 5/15 days, unless delay of repair allowed [40 CFR 63.689(b), 63.964]**	**inspections for visible, audible, or olfactory indications of leaks [40 CFR 63.1256(e)(1)(iii) and 63.1258(h)(2)(iii)]; repair leaks within 5/15 days, unless delay of repair allowed [40 CFR 63.1258(h)(4) and (h)(5)]** • **Inspections not required if unsafe or difficult to monitor [40 CFR 63.1258(h)(6) and (h)(7)]** **IDS covers under negative pressure:** • **Initial M21 or semiannual visual inspections NOT required [40 CFR 63.1256(e)(1)(iv)]**	**olfactory indications of leaks [40 CFR 63.1256(e)(1)(iii) and 63.1258(h)(2)(iii)]; repair leaks within 5/15 days, unless delay of repair allowed [40 CFR 63.1258(h)(4) and (h)(5)]; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.1258(h)(6) and (h)(7)]** **IDS covers under negative pressure:** • **Initial M21 or semiannual visual inspections NOT required [40 CFR 63.1256(e)(1)(iv)]** IDS Cap/Plug Inspections: Visual inspection initially and semiannually to ensure caps/plugs in place and no gaps, cracks, or other holes in cap/ plug; repair leaks within 5/15 days, unless delay of repair allowed [40 CFR 63.1256(e)(5), (6)]
Work Practice Standards - Closed Vent System	**Closed vent system requirements are addressed in the RTO and T79 sections.**					
Fugitive Emission Standards	**Fugitive emission standards are addressed in the LDAR sections.**					

BCM IDS Standard	Applicable Rules					Streamlined Applicable Requirements
	Pharma MACT (40 CFR Part 63 Subpart GGG)	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**PSD BACT Standards (326 IAC 2-2-3)**	
Compliance Demonstration Methods						
TOC CEMS Requirements	The control device compliance requirements are addressed in the RTO section.					
TOC CMS Requirements	The control device compliance requirements are addressed in the RTO and T79 sections.					
TOC Stack Testing Requirements	The control device compliance requirements are addressed in the T79 section.					
Record Keeping and Reporting						
Record Keeping	• Records of inspections performed and leaks detected • List, explanation, inspection plan for unsafe and difficult to inspect [40 CFR 63.1259(i)] • Keep inspection records for period of 5 years [40 CFR 63.10]	• Records of inspections performed and leaks detected or no leak detected • List, explanation, inspection plan for unsafe and difficult to inspect [40 CFR 63.2485 and Table 7, 63.147(b)(1), 63.148(i)] • Keep inspection records for period of 5 years [40 CFR 63.10]	• Records of inspections performed and leaks detected or no leak detected • List, explanation, inspection plan for unsafe and difficult to inspect [40 CFR 63.147(b)(1), 63.148(i)] • Keep inspection records for period of 5 years [40 CFR 63.10]	• IDS inspection plan, including drawings • Dates each IDS inspection performed • All defects detected during inspections [40 CFR 63.964(b)(3) and 63.965(a)(3)] • Keep inspection records for period of 5 years [40 CFR 63.10]	• Records of inspections performed and leaks detected • List, explanation, inspection plan for unsafe and difficult to inspect	• Records of inspections performed and leaks detected or no leak detected • List, explanation, inspection plan for unsafe and difficult to inspect • Keep inspection records for period of 5 years
Reporting	Records of each inspection during which a leak is detected must be included in the next periodic report [63.1260(g)(2)(iii)]	Records of each inspection during which a leak is detected must be included in the next periodic report [40 CFR 63.2485 and Table 7, 63.148(j)(1)]]	Records of each inspection during which a leak is detected must be included in the next periodic report [63.148(j)(1)]]	None	Records of each inspection during which a leak is detected must be included in the next periodic report	Records of each inspection during which a leak is detected must be included in the next periodic report

1. The MON applies if an IDS accepts Group 1 wastewater from a miscellaneous organic chemical manufacturing process unit (MCPU).
2. The HON applies if an IDS accepts Group 1 wastewater from a chemical organic manufacturing process unit (CMPU).

D.9: BCM and BCM Support Operations - Solvent Storage Tanks

Background and Description

The BCM Support Solvent Storage Tanks serve the BCM operations at Tippecanoe Laboratories. The BCM solvent storage tanks are located in Tank Modules T143, T145, and T146. Tanks supporting Fermented Products operations are outside the scope of this section, because those tanks do not serve synthetic pharmaceutical operations, miscellaneous chemical manufacturing process units, offsite waste and recovery operations and are not part of the flexible PSD permit scope.

Types of Emission Units and Pollution Control Equipment

The types of emission units subject to this specific operating area include solvent storage tanks that serve the BCM operations. Emissions from the BCM solvent storage tanks are controlled by the RTO or T79 fume incinerator systems.

Insignificant Activities

While some of the BCM solvent storage tanks may qualify as insignificant activities pursuant to 326 IAC 2-7-1, the PSD BACT requirements for tanks require that all BCM solvent storage tanks comply with the emission limitations and standards set forth in the Title V permit.

Federal Rule Applicability

BCM Support solvent storage tanks are subject to the four federal Clean Air Act requirements listed below. These requirements are described in greater detail in the "Multiple Requirement Streamlining Proposal and BACT Determination" topic within this section.

Applicable federal requirements:

1. 40 CFR Part 60 Subpart Kb, New Source Performance Standards for VOC Liquid Storage Vessels
2. 40 CFR Part 63 Subpart GGG, Pharmaceutical Production (Pharma) MACT
3. 40 CFR Part 63 Subpart FFFF, Miscellaneous Organic Chemical Manufacturing NESHAP (MON)*
4. 40 CFR Part 63 Subpart F (which incorporates Subparts G and H by reference), NESHAP from the Synthetic Organic Chemical Manufacturing Industry (herein referred to as the HON)**

*The MON applies to a Group 1 storage tank [as defined in 40 CFR 63.2550(i)] associated with a miscellaneous organic chemical manufacturing process unit (MCPU).

**The HON applies to a Group 1 storage vessel [as defined in 40 CFR 63.111] associated with a chemical organic manufacturing process unit (CMPU).

State Rule Applicability

The BCM Support solvent storage tank VOHAP/VOC emissions are subject to the Indiana RACT rule applicable to synthesized pharmaceutical manufacturing operations (326 IAC 8-5-3), as well as PSD Best Available Control Technology (BACT) Requirements [326 IAC 2-2]. These requirements are described in greater detail in the "Multiple Requirement Streamlining Proposal and BACT Determination" topic within this section.

Testing and Compliance Requirements

The testing and compliance requirements for the BCM Support solvent storage tanks are described in the streamlining table below.

Multiple Requirement Streamlining and BACT Determination

Although two of the rules address volatile organic compound emissions (VOCs) [40 CFR Part 60 Subpart Kb and 326 IAC 8-5-3] and three rules address hazardous air pollutant (HAP) emissions [40 CFR Part 63 Subparts GGG, FFFF, and F/G], the requirements will typically apply to the same tanks and require similar types of control measures. The purpose of this streamlining proposal is to demonstrate that the requirements of 326 IAC 8-5-3, 40 CFR Part 60 Subpart Kb can be streamlined into more stringent applicable requirements found in either 40 CFR Part 63 Subpart GGG (Pharma MACT), 40 CFR Part 63 Subpart FFFF (MON) or 40 CFR Part 63 Subparts F and G (HON) and the flexible PSD permit requirements that will be established in the Title V permit. IDEM has determined BACT for BCM Support solvent storage tanks is equivalent to the emission limits, control requirements, performance requirements, and work practices of these rules.

The most complex aspect of developing a streamlining proposal for solvent storage tanks is the different applicability thresholds and the types of streams covered for the various requirements of the rule. Requirements may vary depending on the year of construction or modification, the size of the tank, and the vapor pressure of the waste material of the tank, as well as the type of waste material stored in the tank. In order to reduce complexity, this streamlining proposal applies only to tanks meeting the following criteria:

1. Solvent storage tanks located in or supporting BCM operations. BCM pressure vessels greater than 204.9 kPa and vessels attached to motor vehicles are not waste tanks. Solvent storage tanks supporting Fermented Products operations are outside the scope of the PSD permitting project. The waste tanks supporting Fermented Products operations are identified separately under a different section of the Title V permit (Sections D.3, D.4 and D.5).
2. Solvent storage tanks designed to contain an accumulation of waste material containing liquid VOCs with a vapor pressure $\geq$ 3.5 kPa or volatile organic HAPs. BCM solvent storage tanks, containers, and process tanks are subject to different applicable requirements than the BCM waste tanks in this proposal and are addressed under separate streamlining proposals in Sections D.9, D.11 and D.6 of the Title V permit, respectively.
3. Solvent storage tanks with a fixed roof design and routed to a thermal oxidizer or a regenerative thermal oxidizer via a closed vent system.

Even with the exclusion of solvent storage tanks, the applicability thresholds for the applicable rules vary greatly. As a further step for simplification, Tippecanoe Laboratories will generally propose to apply a requirement of a rule that would not otherwise apply to a particular tank.

The following table summarizes the requirements for the BCM Support solvent storage tanks.

Streamlining Table for BCM Solvent Storage Tank Operations

HX = Hydrogen Halide and Halogen

BCM Solvent Storage Tanks	Applicable Requirements						Streamlined Applicable Requirements	Alternative Operating Scenario
	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	**RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON (40 CFR Part 63 Subparts F, G, H)**	**PSD BACT Standards (326 IAC 2-2-3)**		**MON (40 CFR Part 63 Subpart FFFF)**
Applicability								
Date of construction	Tanks constructed reconstructed, or modified after 7/23/84 [40 CFR 60.110b(a)]	**Tanks constructed after January 1, 1980** [326 IAC 8-5-1(2)]	**All new/existing/modified solvent tanks, regardless of construction date** [40 CFR 63.1253]	**All new/existing/modified solvent tanks, regardless of construction date** [40 CFR 63.2470(a), 63.2550(i)]	**All new/existing/ modified solvent tanks, regardless of construction date** [40 CFR 63.111]	**All new/existing/modified solvent tanks, regardless of construction date**		**All new/existing/ modified solvent tanks, regardless of construction date [40 CFR 63.2470(a), 63.2550(i)]**
Tank contents	• Tanks ≥ 75m3 to < 151m3 storing volatile organic liquid (VOL) with vapor pressure (VP) ≥ 15 kPa • Tanks ≥ 151m3 storing VOL with VP ≥ 3.5kPa [40 CFR 60.110b(c) and 60.116b(a), (b)]	• Tanks storing liquid with any VOC content with VP ≥ 10 kPa [326 IAC 8-5-3(b)(3)(B)] • Potential emissions of tank ≥ 15 lb/day [326 IAC 8-5-3(a)]	Tanks storing liquids with organic HAP content with a vapor pressure ≥ 13.1 kPa [40 CFR 63.1253(a)]	**Tanks storing organic HAP* [40 CFR 63.2550(i)] *Does not include MON halogenated vent streams, which are included in the Alternative Operating Scenario portion of this table.**	Tanks storing one or more of the Subpart F Table 2 HAP [40 CFR 63.101]	Tanks storing VOC content	All BCM solvent storage tanks containing VOC or VOHAP, regardless of size or date of construction/ modification	**Halogenated vent streams (those having mass emission rate of ≥ 0.45 kg/hr halogen atoms in organic compounds) [40 CFR 63.2550(i)]**
Tank volume	Tanks ≥ 75 m^3 (10,566 gallons) [40 CFR 60.110b(a)]	All volumes [326 IAC 8-5-3(b)(3)(B)]	Tanks > 38 m3 (10,039 gallons) [40 CFR 63.1253]	Tanks > 38 m3 (10,039 gallons) [40 CFR 63.2550(i)]	Tanks ≧ 38 m^3 (10,039 gallons) [40 CFR 63.101]	All volumes		Tanks > 38 m3 (10,039 gallons) [40 CFR 63.2550(i)]
Notable exclusions	**Pressure vessels > 204.9 kPa, vessels attached to motor vehicles, vessels used to store beverage alcohol** [40 CFR 61.110(b)(d)]	N/A	• **Pressure vessels > 204.9 kPa, vessels attached to motor vehicles [40 CFR 63.1251]** • **240 hours planned routine maintenance allowed. May request extension**	• **Pressure vessels > 204.9 kPa, vessels attached to motor vehicles [40 CFR 63.2550]** • 240 hours control device planned routine maintenance allowed. May	• **Pressure vessels > 204.9 kPa, vessels attached to motor vehicles [40 CFR 63.101]** • **240 hours control device**	Tanks meeting exclusions in columns to left will not be listed as tanks subject to streamlined requirements		• **Pressure vessels > 204.9 kPa, vessels attached to motor vehicles [40 CFR 63.2550]** • 240 hours control device planned routine maintenance allowed [40 CFR

BCM Solvent Storage Tanks	**Applicable Requirements**						**Streamlined Applicable Requirements**	**Alternative Operating Scenario**
	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	**RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON (40 CFR Part 63 Subparts F, G, H)**	**PSD BACT Standards (326 IAC 2-2-3)**		**MON (40 CFR Part 63 Subpart FFFF)**
			to 360 hrs/365-day period in accordance with §63.1253(e). [40 CFR 63.1253(e)]	request an extension to a total of 360 hr/yr in accordance with the procedures specified in §63.2470(d). [40 CFR 63.2505(b)(9), 63.2470(d)]	**planned routine maintenance allowed [40 CFR 63.119(e)(3)]**			63.2505(b)(9), 2470(d)]
Emission limits, control requirements, performance requirements, and work practices								
TOC Emission Limits and Standards	These rules require that BCM Support solvent storage tanks above the applicability threshold be routed to a control device. Details described in RTO and T79 control device sections.			This rule requires that Group 1 storage tanks be routed to a control device.	This rule requires that Group 1 storage vessels with max true VP ≥76.6 kPa be routed to a control device. Details described in RTO and T79 control device sections.	BCM Support solvent storage tanks above the applicability threshold must be routed to a control device. Details described in RTO and T79 control device sections.		
TOC Emission Limits and Standards not requiring control device	No control requirements for tanks < 75 m3 and tanks >75m3 - 151m3 storing VOLs with TVP < 15 kPa and tanks > 151 m3 storing VOLs with TVP < 3.5 kPa.	**No control requirements for tanks with PTE < 15 lbs VOC/day**	No control requirements for tanks <10,000 gal or storing liquid with max true VP < 13.1 kPa [40 CFR 63.1253(a)]	**No control requirements for tanks < 38m3 (10,038 gal) or storing material < 6.9 kPa maximum true vapor pressure of total HAP for existing sources [40 CFR 63.2550(i)]**	**No control requirements for storage vessels: • < 75 m^3 • ≥ 75 and <151 m3 and < 13.1 kPa maximum true VP • ≥ 151 m^3 and < 5.2 kPa maximum true VP [40 CFR 63.111 and HON Table 5]**	**No control requirements for tanks with VP < 3.5 kPa**		N/A; Alternative Operating Scenario is for HX Standard only

BCM Solvent Storage Tanks	**Applicable Requirements**						**Streamlined Applicable Requirements**	**Alternative Operating Scenario**
	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	**RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON (40 CFR Part 63 Subparts F, G, H)**	**PSD BACT Standards (326 IAC 2-2-3)**		**MON (40 CFR Part 63 Subpart FFFF)**
HX Emission Limits and Standards	N/A	These rules require that BCM Support solvent storage tanks above the applicability threshold be routed to a control device. Details described in RTO and T79 control device sections.		These are addressed in the Alternative Operating Scenarios portion of this table.	**N/A**	BCM Support solvent storage tanks above the applicability threshold must be routed to a control device. Details described in RTO and T79 control device sections.		**This rule requires that a halogenated vent stream from a Group 1 storage tank be routed to a control device.**
HX Emission Limits and Standards not requiring control device	N/A	**No control requirements for tanks with PTE < 15 lbs VOC/day**	No control requirements for tanks <10,000 gal or storing liquid with max true VP < 13.1 kPa [40 CFR 63.1253(a)]	These are addressed in the Alternative Operating Scenarios portion of this table.	**N/A**	**No control requirements for tanks with VP < 3.5 kPa**		No control required for storage tanks that are not Group 1 and/or do not contain halogenated vent streams [40 CFR 63.2470 and MON Table 4]
Work Practice Standards – Tank Inspections	None Specified	**All leaks observed running or dripping shall be repaired whenever equipment is off-line long enough to repair** [326 IAC 8-5-3(b)(6)]	None Specified	None specified for tanks with fixed roofs [40 CFR 63.1063 and MON Table 4, 63.1063]	None specified for tanks with fixed roofs [63.119(b)-(d), 120(a) – (c)]]	• Initial M21 for components not covered under LDAR on BCM solvent storage tanks not operated under negative pressure and • Semiannual visual inspections for all BCM solvent storage tanks > 3.5 kPa. These inspections not required if unsafe or difficult to monitor. • Leaks must be repaired within 5/15 days, unless delay of repair • This requirement is consistent with BCM waste tank requirements addressed in Section D.10 to satisfy BACT requirements		None specified for tanks with fixed roofs [MON Table 4, 63.1063]
Work Practice Standards - Closed Vent System	Closed vent system requirements are addressed in the RTO and T79 sections.							
Fugitive Emission Standards	Fugitive emission standards are addressed in the LDAR sections.							

BCM Solvent Storage Tanks	Applicable Requirements						Streamlined Applicable Requirements	Alternative Operating Scenario
	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	Pharma MACT (40 CFR Part 63 Subpart GGG)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON (40 CFR Part 63 Subparts F, G, H)	PSD BACT Standards (326 IAC 2-2-3)		MON (40 CFR Part 63 Subpart FFFF)
Compliance Demonstration Methods								
TOC and HX CMS Requirements	The control device compliance requirements are addressed in the RTO and T79 sections.							
TOC and HX Stack Testing Requirements	The control device compliance requirements are addressed in the RTO and T79 sections.							
CMS Monitoring Requirements for Closed Vent System	The control device compliance requirements are addressed in the RTO and T79 sections.							
Record keeping and Reporting								
Records	• Tank dimensions & capacity for life of source [40 CFR 60.116b(a) and (b)] • Copy of operating plan for the life of the control equipment [40 CFR 60.115(c)(1)] • Records of measured values of parameters in operating plan [40 CFR 60.115b(c)(2)] • For variable waste mixtures, prior to initial filling, estimate maximum true VP seen by tank. If below	None specified	• Records of equipment operation [40 CFR 63.10(b)(2)(vii) and (viii), 63.1259 and 63.1255(g)] • Control device and closed vent system requirements addressed in RTO or T79 sections.	None specified	None specified	• Tank dimensions & capacity for life of source • Copy of operating plan for life of control equipment • Records of measured values of parameters in operating plan (Incorporated into RTO and T79 permit sections) • Documentation of repair extension: description of the failure, unavailability of alternative storage, ad schedule to ensure repairs as soon as practical • Records of inspections performed and leaks detected • List, explanation, inspection plan for unsafe and difficult to inspect • Keep inspection records for 5 years	None specified	

BCM Solvent Storage Tanks	Applicable Requirements						Streamlined Applicable Requirements	Alternative Operating Scenario
	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	Pharma MACT (40 CFR Part 63 Subpart GGG)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON (40 CFR Part 63 Subparts F, G, H)	PSD BACT Standards (326 IAC 2-2-3)		MON (40 CFR Part 63 Subpart FFFF)
	control level, but above monitoring cutoff level, test initially and every 6 months. [40 CFR 60.116b]							
Reports	Construction and startup notifications per Part 60 General Provisions	None specified	None specified	None specified	None specified	• Pre-construction notice for storage tanks (per Kb) over 19,800 gallons, except if mass-produced and purchased in completed form • Startup notice for storage tanks (per Kb) over 19,800 gallons • Quarterly report of monthly emissions and quarterly deviation reports from BACT requirements addressed in RTO, T79, and Change Management sections of the permit		None specified

1. This regulation applies to Group 1 storage tanks [as defined in 40 CFR 63.2550(i)] associated with a miscellaneous organic chemical manufacturing process unit (MCPU).
2. This regulation applies to Group 1 storage vessels [as defined in 40 CFR 63.111] associated with a chemical manufacturing process unit (CMPU).

D.10: BCM and BCM Support Operations - Waste Storage Tanks

Background and Description

The bulk chemical manufacturing (BCM) waste storage tanks serve the BCM operations at Tippecanoe Laboratories and may be used to store offsite waste from other facilities. The BCM waste tanks are located in Tank Modules T140, T142, T143, T145 and T146, outside in the T48 tank farm, and in the BCM buildings. Waste storage tanks supporting Fermented Products operations are outside the scope of this section, because they do not contain affected wastewater subject to the Pharma MACT (40 CFR Part 63 Subpart GGG), Group 1 wastewater subject to the MON (40 CFR Part 63 Subpart FFFF), Group 1 wastewater subject to the HON (40 CFR Part 63 Subparts F and G), do not serve offsite waste and recovery operations subject to 40 CFR Part 63 Subpart DD and are not part of the flexible PSD permit scope.

Types of Emission Units and Pollution Control Equipment

The types of emission units subject to this specific operating area include storage tanks containing waste from BCM operations at Tippecanoe Laboratories and/or storage tanks containing waste from offsite sources. The emissions from the BCM waste tanks are controlled by one of two Regenerative Thermal Oxidizers equipped with caustic scrubbing systems (RTO system) or by one of two T79 fume incinerators equipped with caustic scrubbing systems (T79 Fume Incinerator system).

Insignificant Activities

While some of the BCM waste tanks may qualify as insignificant activities pursuant to 326 IAC 2-7-1(21) because VOC emissions are equal to or less than 3 pounds per hour or 15 pounds per day, the PSD requirements for waste tanks require that all BCM waste tanks comply with the emission limitations and standards set forth in the Title V permit.

Federal Rule Applicability

BCM waste storage tanks are subject to the five federal Clean Air Act requirements listed below. These requirements are described in greater detail in the “Multiple Requirement Streamlining Proposal and BACT Determination” topic within this section.

Applicable federal requirements:

5. 40 CFR Part 60 Subpart Kb, New Source Performance Standards for VOC Liquid Storage Vessels
6. 40 CFR Part 63 Subpart GGG, Pharmaceutical Production (Pharma) MACT
7. 40 CFR Part 63 Subpart FFFF, Miscellaneous Organic Chemical Manufacturing NESHAP (MON)*
8. 40 CFR Part 63 Subpart DD, Off-site Waste and Recovery Operations (OSWRO) MACT
9. 40 CFR Part 63 Subpart F (which incorporates Subparts G and H by reference), NESHAP from the Synthetic Organic Chemical Manufacturing Industry (herein referred to as the HON)**

*This regulation applies if a BCM waste tank accepts Group 1 wastewater from of a miscellaneous organic chemical manufacturing process unit (MCPU).

**This regulation applies if a BCM waste tank accepts Group 1 wastewater from a chemical organic manufacturing process unit (CMPU).

State Rule Applicability

The waste storage tank VOHAP/VOC emissions in BCM areas are subject to the Indiana RACT rule applicable to synthesized pharmaceutical manufacturing operations (326 IAC 8-5-3), as well as PSD

Best Available Control Technology (BACT) Requirements [326 IAC 2-2]. These requirements are described in greater detail in the "Multiple Requirement Streamlining Proposal and BACT Determination" topic within this section.

Testing and Compliance Requirements

The testing and compliance requirements for the BCM waste storage tanks are described in the streamlining table below.

Multiple Requirement Streamlining and BACT Determination

Although two of the rules address volatile organic compound emissions (VOCs) [40 CFR Part 60 Subpart Kb and 326 IAC 8-5-3] and four rules address hazardous air pollutant (HAP) emissions [40 CFR Part 63 Subparts GGG, FFFF, F and G, and DD], the requirements will typically apply to the same tanks and require similar types of control measures. The purpose of this streamlining proposal is to demonstrate that the requirements of 326 IAC 8-5-3, 40 CFR Part 60 Subpart Kb, and 40 CFR Part 63 Subpart DD can be streamlined into more stringent applicable requirements found in either 40 CFR Part 63 Subpart GGG (Pharma MACT), 40 CFR Part 63 Subpart FFFF (MON) or 40 CFR Part 63 Subparts F and G (HON) and the flexible PSD permit requirements that will be established in the Title V permit. IDEM has determined BACT for BCM waste storage tanks is equivalent to the emission limits, control requirements, performance requirements, and work practices.

The most complex aspect of developing a streamlining proposal for waste storage tanks is the different applicability thresholds and the types of waste streams covered for the various requirements of the rule. Requirements may vary depending on the year of construction or modification, the size of the tank, and the vapor pressure of the waste material of the tank, as well as the type of waste material stored in the tank. In order to reduce complexity, this streamlining proposal applies only to tanks meeting the following criteria:

4. Waste storage tanks located in or supporting BCM operations. BCM pressure vessels greater than 204.9 kPa and vessels attached to motor vehicles are not waste tanks. Waste tanks supporting Fermented Products operations are outside the scope of the PSD permitting project. The waste tanks supporting Fermented Products operations are identified separately under a different section of the Title V permit (Sections D.3, D.4 and D.5).
5. Waste storage tanks designed to contain an accumulation of waste material containing liquid VOCs with a vapor pressure $\geq$ 3.5 kPa or volatile organic HAPs. BCM solvent storage tanks, containers, and process tanks are subject to different applicable requirements than the BCM waste tanks in this proposal and are addressed under separate streamlining proposals in Sections D.9, D.11 and D.6 of the Title V permit, respectively.
6. Waste storage tanks with a fixed roof design and routed to a thermal oxidizer or a regenerative thermal oxidizer via a closed vent system.

Even with the exclusion of solvent storage tanks, the applicability thresholds for the applicable rules vary greatly. As a further step for simplification, Tippecanoe Laboratories will generally propose to apply a requirement of a rule that would not otherwise apply to a particular tank.

The following table summarizes the requirements for the BCM waste storage tanks.

Streamlining Table for BCM Waste Storage Tanks

BCM Waste Storage Tanks	Applicable Requirements							Streamlined Applicable Requirement
	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	Pharma MACT (40 CFR Part 63 Subpart GGG)	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**PSD BACT Standards (326 IAC 2-2-3)**	
Applicability								
Date of Construction	Tanks constructed reconstructed, or modified after 7/23/84 [40 CFR 60.110b(a)]	**Tanks constructed after January 1, 1980** [326 IAC 8-5-1(2)]	**All new/existing/modified wastewater tanks, regardless of construction date** [40 CFR 63.1251]	**All new/existing/modified wastewater tanks, regardless of construction date** [40 CFR 63.2485(a), 63.111]	**All new/existing/ modified wastewater tanks, regardless of construction date** [40 CFR 63.111]	Any new/existing/ **modified waste tank regardless of construction date** [40 CFR 63.680]	All new/existing /modified solvent tanks, regardless of construction date	All new/existing /modified waste storage tanks, regardless of construction date
Tank Contents	• Tanks $\geq$ 75m3 to < 151m3 storing volatile organic liquid (VOL) with vapor pressure (VP) $\geq$ 15 kPa • Tanks $\geq$ 151m3 storing VOL with VP $\geq$ 3.5kPa [40 CFR 60.110b(c) and 60.116b(a), (b)]	• Tanks storing liquid with any VOC content with VP $\geq$ 10 kPa [326 IAC 8-5-3(b)(3)(B)] • Potential emissions of tank $\geq$ 15 lb/day [326 IAC 8-5-3(a)]	Tanks storing affected wastewater (see affected wastewater definition in "Applicability" section of Streamlining Table for BCM Individual Drain Systems)	Tanks storing Group 1 wastewater or wastewater residuals (see Group 1 definition in "Applicability" section of Streamlining Table for BCM Individual Drain Systems)	Tanks storing Group 1 wastewater or wastewater residuals (see Group 1 definition in "Applicability" section of Streamlining Table for BCM Individual Drain Systems)	Tanks storing off-site material with HAP content $\geq$ 500 ppmw [40 CFR 63.680(b)(1)]	Tanks storing waste with VOC content	BCM waste tanks containing VOC and/or VOHAP with vapor pressure $\geq$ 3.5kPa
Tank Volume	Tanks $\geq$ 75 m^3 (10,566 gallons) [40 CFR 60.110b(a)]	All volumes [326 IAC 8-5-3(b)(3)(B)]	All volumes [40 CFR 63.1256]	All volumes [40 CFR 63.2485(a), 63.111]	All volumes [40 CFR 63.111]	All volumes [40 CFR 63.680]	All volumes	All volumes
Notable Exclusions	**Pressure vessels > 204.9 kPa, vessels attached to motor vehicles, vessels used to store beverage alcohol** [40 CFR 61.110(b)(d)]		BCM waste tanks are not subject to the operational standards during periods of planned routine maintenance on the control device as long as the control device's planned routine maintenance activities do not exceed 240 hours per	The emission limits specified in §§63.133(b)(2) and 63.139 for control devices used to control emissions from wastewater tanks do not apply during periods of planned routine			Same exclusions allowed by other rules applied to BACT	Tanks meeting these exclusions will be listed as tanks not subject to streamlined requirements

BCM Waste Storage Tanks	Applicable Requirements							Streamlined Applicable Requirement
	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	Pharma MACT (40 CFR Part 63 Subpart GGG)	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**PSD BACT Standards (326 IAC 2-2-3)**	
			365 day period. May submit an application requesting extension to a total of 360 hours in any 365-day period. Application must explain why extension is needed, specify that no affected wastewater will be added to tank between the time the 240-hour limit is exceeded and the control device is again operational, and it must be submitted at least 60 days before the 240-hour limit will be exceeded. Wastewater tanks shall not be sparged with air or other gases without an operational control device. [40 CFR 63.1256(b)(10)]	maintenance of the control device(s) of no more than 240 hr/yr. May request an extension to a total of 360 hr/yr in accordance with the procedures specified in §63.2470(d). [40 CFR 63.2485(d)(4)]				
Emission Limits, Control Requirements, Performance Requirements, and Work Practices								
TOC Point Source Emission and Limits & Standards	The incineration limits are addressed in the RTO and T79 sections.							
TOC Point Source Emission and Limits & Standards requiring no control device	• Tanks ≥ 75 m3 storing VOL with TVP < 15 kpa • Tanks > 151 m3 storing VOL with TVP < 3.5 kpa [40 CFR 60.110b(c) and 60.116b(a), (b)]		Fixed roof only required for tanks: • <75 m3 • ≥ 75 m^3 to < 151 m^3 @ VP ≤ 13.1 kPa • ≥ 151m^3 @ ≤ 5.2kPa [40 CFR 63.1256(b)(1), Table 6]	**• Fixed roof except if tank used for heating, treating by exothermic reaction, or sparging contents • Fixed roof may also be used if total partially soluble and soluble HAP emissions from tank are ≤ 5% higher than if contents were not**	**Fixed roof except if tank used for heating, treating by exothermic reaction, or sparging contents [40 CFR 63.133(a)]**	**Closure device required for tanks ≤ 75 m^3 @ ≤ 76.6 kPa, ≥ 75 m^3 to < 151 m^3 @ ≤ 27.6 kPa, ≥ 151 m^3 @ ≤ 5.2 kPa [40 CFR 63.685(b)(1), (c)(2), and 63.902]**	**No control device required for BCM waste tanks storing VOL with VP < 3.5 kPa**	**Only fixed roof required if BCM waste tank contents have VP < 3.5 kPa and are not heated, treated by means of exothermic reaction, or sparged.**

BCM Waste Storage Tanks	Applicable Requirements							Streamlined Applicable Requirement
	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	Pharma MACT (40 CFR Part 63 Subpart GGG)	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**PSD BACT Standards (326 IAC 2-2-3)**	
				heated, treated by exothermic reaction, or sparged. [40 CFR 63.2485(d)(3), 63.133(a)]				
Work Practice Standards – Tank Inspections	None Specified	**All leaks observed running or dripping shall be repaired whenever equipment is off-line long enough to repair** [326 IAC 8-5-3(b)(6)]	**For Waste Tanks not under negative pressure:** • **Initial M21 and semiannual visual inspections of fixed roof and all openings for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.1256(b)(3)(i)(A), 63.1258(h)(2)(iii), (4), (6), and (7)]** Tanks under negative pressure: • No initial M21/visual inspections required [40 CFR 63.1256(b)(3)(iv)] **Waste Tank Cover Inspections:** • **Initial/Semiannual tank cover inspections for improper work practices and control equipment failures; repair leaks within 5/45 days; 2, 30-day**	**For Waste Tanks not under negative pressure:** • **Initial M21 and semiannual visual inspections of fixed roof and all openings for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.2485(d), 63.133(b)(1)(i), 63.148(h),(i)]** Tanks under negative pressure: • No initial M21/visual inspections required [40 CFR 63.2485(d), 63.133(b)(4)] **Waste Tank Cover Inspections:** • **Initial/Semiannual tanks inspections**	**For Waste Tanks not under negative pressure:** • **Initial M21 and semiannual visual inspections of fixed roof and all openings for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.133(b)(1)(i), 63.148(h),(i)]** Tanks under negative pressure: • No initial M21/visual inspections required [40 CFR 63.133(b)(4)] **Waste Tank Cover**	**Waste Tank Cover Inspections: Initial/ tank cover inspections for improper work practices and control equipment failures; repair leaks within 5/45 days; 2, 30-day extensions allowed [40 CFR 63.695(b)(3)]**	**For Waste Tanks not under negative pressure:** • **Initial M21 and semiannual visual inspections of fixed roof and all openings for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect** Tanks under negative pressure: • No initial M21/visual inspections required **Waste Tank Cover Inspections:** • **Initial/ Semiannual**	**For Waste Tanks not under negative pressure:** • **Initial M21 and semiannual visual inspections of fixed roof and all openings for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect** Tanks under negative pressure: • No initial M21/visual inspections required **Waste Tank Cover Inspections:** • **Initial/ Semiannual tank cover inspections for improper work**

BCM Waste Storage Tanks	Applicable Requirements							Streamlined Applicable Requirement
	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	Pharma MACT (40 CFR Part 63 Subpart GGG)	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**PSD BACT Standards (326 IAC 2-2-3)**	
			extensions allowed [40 CFR 63.1256(b)(7) –(9)]	**for improper work practices; repair leaks within 5/45 days; 2, 30-day extensions allowed if cannot be repaired and cannot be emptied within 45 days [40 CFR 63.2485(d), 63.133(f), (g), and (h)]**	**Inspections:** • **Initial/Semiannual tanks inspections for improper work practices; repair leaks within 5/45 days; 2, 30-day extensions allowed if cannot be repaired and cannot be emptied within 45 days** **[40 CFR 63.133(f), (g), and (h)]**		**tank cover inspections for improper work practices and control equipment failures; repair leaks within 5/45 days; 2, 30-day extensions allowed**	**practices and control equipment failures; repair leaks within 5/45 days; 2, 30-day extensions allowed** Note: Initial Method 21 Inspections already completed for all existing tanks not operated under negative pressure
Work Practice Standards - Closed Vent System	Closed vent system requirements are addressed in the RTO and T79 sections.							
Fugitive Emission Standards	Fugitive emission standards are addressed in the LDAR sections.							
Compliance Demonstration Methods								
TOC CEMS Requirements	The control device compliance requirements are addressed in the RTO section.							
TOC CMS Requirements	The control device compliance requirements are addressed in the RTO and T79 sections.							
TOC Stack Testing Requirements	The control device compliance requirements are addressed in the T79 section.							
Record Keeping and Reporting								
Record Keeping	• Tank dimensions & capacity for life of source [40 CFR 60.116b(a) and (b)] • Copy of operating plan	None Specified	• Documentation of repair extension: description of the failure, unavailability of alternative storage, ad schedule to ensure repairs as soon as practical [40 CFR 63.1256(b)(9)]	• Documentation of repair extension: description of the failure, unavailability of alternative storage, ad schedule to ensure repairs as	• Documentation of repair extension: description of the failure, unavailability of alternative storage, ad schedule to	• Documentation of repair extension: description of the failure, unavailability of alternative storage, ad schedule to	• Documentation of repair extension: description of the failure, unavailability of alternative storage, ad schedule to	• Tank dimensions & capacity for life of source • Copy of operating plan for life of control equipment • Records of measured values

BCM Waste Storage Tanks	Applicable Requirements							Streamlined Applicable Requirement
	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	Pharma MACT (40 CFR Part 63 Subpart GGG)	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**PSD BACT Standards (326 IAC 2-2-3)**	
	for the life of the control equipment [40 CFR 60.115(c)(1)] • Records of measured values of parameters in operating plan [40 CFR 60.115b(c)(2)] • For variable waste mixtures, prior to initial filling, estimate maximum true VP seen by tank. If below control level, but above monitoring cutoff level, test initially and every 6 months. [40 CFR 60.116b]		• Records of inspections performed and leaks detected • List, explanation, inspection plan for unsafe and difficult to inspect [40 CFR 63.1259(i)] • Keep inspection records for period of 5 years [40 CFR 63.10]	soon as practical [40 CFR 63.2485(d), 63.133(h)] • Records of inspections performed and leaks detected • List, explanation, inspection plan for unsafe and difficult to inspect [40 CFR 63.2485(d), 63.147(b)(1),(6)] • Keep inspection records for period of 5 years [40 CFR 63.10]	ensure repairs as soon as practical [40 CFR 63.133(h)] • Records of inspections performed and leaks detected • List, explanation, inspection plan for unsafe and difficult to inspect [40 CFR 63.147(b)(1),(6)] • Keep inspection records for period of 5 years [40 CFR 63.10]	ensure repairs as soon as practical [40 CFR 63.695(b)(3)] • Records of inspections performed and leaks detected [40 CFR 63.696(e)]	ensure repairs as soon as practical • Records of inspections performed and leaks detected • List, explanation, inspection plan for unsafe and difficult to inspect	of parameters in operating plan (Incorporated into RTO and T79 permit sections) • Documentation of repair extension: description of the failure, unavailability of alternative storage, ad schedule to ensure repairs as soon as practical • Records of inspections performed and leaks detected • List, explanation, inspection plan for unsafe and difficult to inspect • Keep inspection records for 5 years
Reporting	Construction and Startup notifications per 40 CFR Part 60 General Provisions	None Specified	For tank cover Method 21 inspections and visual inspections that detect a leak, report leaking equipment ID and associated leak details [40 CFR 63.1260(g)(2)(iii), 63.1259(i)(7)]	For control equipment failure, report leaking equipment ID and associated leak details [40 CFR 63.2485(d), 63.146(c)]	For control equipment failures, report leaking equipment ID and associated leak details [40 CFR 63.146(c)]	None specified specific to waste tanks	Report leaking equipment ID and associated leak details when leaks detected	Report leaking equipment ID and associated leak details when leaks detected

1: The MON applies if an IDS accepts Group 1 wastewater from a miscellaneous organic chemical manufacturing process unit (MCPU).
2: The HON applies if an IDS accepts Group 1 wastewater from a chemical organic manufacturing process unit (CMPU).

D.11: BCM and BCM Support Operations - Waste Containers

Background and Description

Bulk chemical manufacturing (BCM) waste containers serve the BCM and BCM support operations at Tippecanoe Labs, as well as to store offsite waste from other facilities. Waste containers supporting
Fermented Products operations are outside the scope of this section, because they do not contain affected wastewater subject to the Pharma MACT (40 CFR Part 63 Subpart GGG), Group 1 wastewater subject to the MON (40 CFR Part 63 Subpart FFFF), Group 1 wastewater subject to the HON (40 CFR Part 63 Subparts F and G), do not serve offsite waste and recovery operations subject to 40 CFR Part 63 Subpart DD and are not part of the flexible PSD permit scope..

Types of Emission Units and Pollution Control Equipment

BCM waste containers are categorized into small and large containers and contain waste material generated from the BCM operations at Tippecanoe Labs or contain waste material generated from offsite facilities. Small containers, such as drums, are typically located in the BCM buildings and T148 container storage building.

Large containers, such as tankers, are used to transfer waste material from the Solvent Recovery tank storage buildings to Incineration Services tank storage buildings. Large containers are also used to transfer waste materials offsite for disposal or to transfer offsite waste materials onsite for disposal or treatment. Waste materials transferred onsite via large containers are unloaded either at the Solvent Recovery storage area or the Incineration Services storage area. Large containers are loaded and via a submerged fill pipe.

Insignificant Activities

The BCM waste containers qualify as insignificant activities pursuant to 326 IAC 2-7-1(21) because VOC emissions are equal to or less than 3 pounds per hour or 15 pounds per day.

Federal Rule Applicability

Waste containers in the BCM areas are subject to the four federal Clean Air Act requirements listed below. These requirements are described in greater detail in the “Multiple Requirement Streamlining Proposal and BACT Determination” topic within this section.

Applicable federal requirements:

1. 40 CFR Part 63 Subpart GGG, Pharmaceutical Production (Pharma) MACT
2. 40 CFR Part 63 Subpart FFFF, Miscellaneous Organic Chemical Manufacturing NESHAP (MON)*
3. 40 CFR Part 63 Subpart DD, Off-site Waste and Recovery Operations (OSWRO) MACT
4. 40 CFR Part 63 Subpart F (which incorporates Subparts G and H by reference), NESHAP from the Synthetic Organic Chemical Manufacturing Industry (herein referred to as the HON)**

*This regulation applies if a waste container accepts Group 1 wastewater from a miscellaneous organic chemical manufacturing process unit (MCPU).

**This regulation applies if a waste container accepts Group 1 wastewater from a chemical organic manufacturing process unit (CMPU).

Other Federal Requirements
NSPS 40 CFR Part 60 Subpart Kb (New Source Performance Standard for Volatile Organic Liquid Storage Vessels) – The control requirements of this rule apply to storage vessels, which includes containers, with a capacity greater than or equal 75 cubic meters (m^3). The largest containers utilized at Tippecanoe Laboratories are tanker trucks that have a capacity of 25,000 liters, or 25 cubic meters. Therefore, the requirements of this rule do not apply to the BCM waste containers.

State Rule Applicability

The waste container VOHAP/VOC emissions in BCM areas are subject to the PSD Best Available Control Technology (BACT) Requirements [326 IAC 2-2]. These requirements are described in greater detail in the "Multiple Requirement Streamlining Proposal and BACT Determination" topic within this section.

Other State Requirements
326 IAC 8-5-3 (Synthetic Pharmaceutical RACT Rule) – The control requirements of 326 IAC 8-5-3 do not apply to the BCM waste containers because potential to emit from each container is less than 15 pounds per day.

Testing and Compliance Requirements

The testing and compliance requirements for the BCM waste containers are described in the streamlining table below.

Multiple Requirement Streamlining and BACT Determination

The purpose of this streamlining is to demonstrate that the requirements of 40 CFR Part 63, Subpart DD (the National Emission Standard for Hazardous Air Pollutants, or NESHAP, for offsite waste and recovery operations, or OSWRO) can be streamlined into more stringent applicable waste container requirements found in either 40 CFR Part 63 Subpart GGG (Pharmaceutical Production, or "Pharma" MACT) or FFFF (Miscellaneous Organic Chemical Manufacturing NESHAP (MON) and the flexible PSD permit requirements that will be established in the Title V permit. IDEM has determined BACT for BCM waste containers is equivalent to the emission limits, control requirements, performance requirements, and work practices.

With the exception of determining waste container applicability to the MACT standards, in most cases, the Pharma MACT and MON requirements for waste containers are identical. Additionally, with the exception of the control device standards, which are identified in permit sections D.14 and D.15, the HON waste container standards are identical to the MON and Pharma MACT standards. Based on this similarity, the flexible permit requirements identify the Pharma MACT requirements as the streamlined requirements. In any cases in which the MON or HON requirements are more stringent than the Pharma MACT, the requirements of the MON/HON are identified as the streamlined requirement. For purposes of determining waste container applicability to the MACT standards, Tippecanoe Laboratories incorporated the requirements of the Pharma MACT, MON and HON. Generally, any BCM waste container that accepts wastewater subject to the Pharma MACT also has the ability to accept wastewater subject to the MON, and vice versa.

The following table summarizes the requirements for the BCM waste containers.

Streamlining Table for BCM Waste Containers

BCM Waste Containers	Applicable Requirements					Streamlined Applicable Requirement
	Pharma MACT (40 CFR Part 63 Subpart GGG)	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**PSD BACT Standards (326 IAC 2-2-3)**	
Applicability						
Date of Construction	**All new/existing/modified wastewater containers, regardless of construction date** [40 CFR 63.1251]	**All new/existing/modified wastewater containers, regardless of construction date** [40 CFR 63.2485(a), 63.111]	**All new/existing/modified wastewater containers, regardless of construction date** [40 CFR 63.111]	Any new/existing/ **modified waste containers** [40 CFR 63.680]	All new/existing/modified waste containers	All new/existing /modified BCM waste containers, regardless of construction date
Waste Container Contents	Wastewater containers storing affected wastewater (see affected wastewater definition in "Applicability" section of Streamlining Table for BCM Individual Drain Systems)	Wastewater containers storing Group 1 wastewater or wastewater residuals (see Group 1 definition in "Applicability" section of Streamlining Table for BCM Individual Drain Systems)	Wastewater containers storing Group 1 wastewater or wastewater residuals (see Group 1 definition in "Applicability" section of Streamlining Table for BCM Individual Drain Systems)	Waste containers storing off-site waste material with HAP content $\geq$ 500 ppmw [63.680(b)(1)]	Waste containers storing waste with VOC content	BCM waste containers containing VOC and/or VOHAP
Waste Container Volume	Any portable waste management unit (waste container) $\geq$ 0.1 m^3 (26.4 gallons) [40 CFR 63.1251]	Any portable waste management unit (waste container) $\geq$ 0.1 m^3 (26.4 gallons) [40 CFR 63.2485(a), 63.111]	Any portable waste management unit (waste container) $\geq$ 0.1 m^3 (26.4 gallons) [40 CFR 63.111]	Waste containers $\geq$ 0.1 m^3 (26.4 gallons) [40 CFR 63.688(a)(1)]	Waste containers $\geq$ 0.1 m^3 (26.4 gallons)	Waste containers $\geq$ 0.1 m^3 (26.4 gallons)
Notable Exclusions	Opening allowed for filling, removal, inspection, sampling or pressure relief events related to safety considerations [40 CFR 63.1256(d)(1)(iii)]	Opening allowed for filling, removal, inspection, sampling or pressure relief events related to safety considerations [40 CFR 63.2485(a), 63.135(b)(3)]	Opening allowed for filling, removal, inspection, sampling or pressure relief events related to safety considerations [40 CFR 63.135(b)(3)]	Opening of closure device allowed for filling, removal, inspection, sampling or pressure relief events related to safety considerations [40 CFR 63.922(d)(1)-(5)]	Opening allowed for filling, removal, inspection, sampling or pressure relief events related to safety considerations	Opening allowed for filling, removal, inspection, sampling or pressure relief events related to safety considerations
Emission limits, control requirements, performance requirements, and work practices						
TOC Emission Limits and Standards for Small Waste Containers	Control Options for wastewater containers >0.1 m^3 to < 0.42 m^3: • DOT compliant container; or • **Maintain cover/openings without leaks (verified via Method 21).**	Control Options for wastewater containers >0.1 m^3 to < 0.42 m^3: • DOT compliant container; or • **Maintain cover/openings**	Control Options for wastewater containers >0.1 m^3 to < 0.42 m^3: • DOT compliant container; or • **Maintain cover/openings**	**Control Options for waste containers > 0.1 m^3 to < 0.46 m^3 and > 0.46 m^3 not in light-material service [40 CFR 63.688(b)(1)(i) and 63.888(b)(2)]:** • **DOT compliant**	Waste containers > 0.1 m3 to $\leq$ 0.42 m^3: • Utilize DOT containers; and • Maintain cover and all openings in a closed position at all times	Waste containers > 0.1 m3 to $\leq$ 0.42 m^3: • Utilize DOT containers; and • Maintain cover and all openings in a closed position at all times except for filling,

BCM Waste Containers	Applicable Requirements					Streamlined Applicable Requirement
	Pharma MACT (40 CFR Part 63 Subpart GGG)	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**PSD BACT Standards (326 IAC 2-2-3)**	
	[40 CFR 63.1256(d)(1)(ii)(A) and (B)] and • Maintain cover and all openings in a closed position at all times except for filling, removal, inspection, sampling or pressure relief events related to safety considerations [40 CFR 63.1256(d)(1)(iii)]	**without leaks.** **[40 CFR 63.2485(a), 63.135(b)(2)]** and • **Maintain cover and all openings in a closed position at all times except for filling, removal, inspection, sampling or pressure relief events related to safety considerations [40 CFR 63.2485(a), 63.135(b)(3)]**	**without leaks (verified via Method 21).** [40 CFR 63.135(b)(2)] and • **Maintain cover and all openings in a closed position at all times except for filling, removal, inspection, sampling or pressure relief events related to safety considerations [40 CFR 63.135(b)(3)]**	**container;** **or** • **Cover/closure device secured on container;** **or** • **Organic vapor-suppressing barrier on open-top container.** **[40 CFR 63.922(b)]**	except for filling, removal, inspection, sampling or pressure relief events related to safety considerations.	removal, inspection, sampling or pressure relief events related to safety considerations.
TOC Emission Limits and Standards for Large Waste Containers	Control Options for wastewater containers > 0.42 m^3: • Use submerged fill pipe for filling operations [40 CFR 63.1256(d)(2)(i)(A)]; or • Locate container within an enclosure with closed-vent system that routes to control [40 CFR 63.1256(d)(2)(i)(B)]; or • Use closed-vent system to vent displaced organic vapors from container to control device or back to equipment from which wastewater is transferred [40 CFR 63.1256(d)(2)(i)(C)]. and • Maintain cover/openings without leaks [40 CFR 63.1256(d)(1)(i)] and • Maintain cover and all openings in a closed position at all times except for filling, removal,	Control Options for wastewater containers > 0.42 m^3: • Use submerged fill pipe meeting design specifications for filling operations [40 CFR 63.2485(a), 63.135(c)]; **and** • Maintain cover/openings without leaks [40 CFR 63.2485(a), 63.135(b)(1), 63.148] and • Maintain cover and all openings in a closed position at all times except for filling, removal, inspection, sampling or pressure relief events related to safety considerations [40 CFR 63.2485(a), 63.135(b)(3)]	Control Options for wastewater containers > 0.42 m^3: • Use submerged fill pipe meeting design specifications for filling operations [40 CFR 63.135(c)]; **and** • Maintain cover/openings without leaks [40 CFR 63.135(b)(1), 63.148] and • Maintain cover and all openings in a closed position at all times except for filling, removal, inspection, sampling or pressure relief events related to safety considerations [40 CFR 63.135(b)(3)]	**Container Level 2 Controls for > 0.46 m^3, in light-material service [40 CFR 63.688(b)(3)]:** • **DOT compliant container;** **or** • **Operate with no detectable organic emissions;** **or** • **Vapor tight container demonstration.** [40 CFR 63.923(b)]	Waste containers > 0.42 m^3 not operated under negative pressure: • Use submerged fill pipe for filling operations; and • Maintain cover/openings without leaks and • Maintain cover and all openings in a closed position at all times except for filling, removal, inspection, sampling or pressure relief events related to safety considerations	Waste containers > 0.42 m^3 not operated under negative pressure: • Use submerged fill pipe for filling operations; and • Maintain cover/openings without leaks and • Maintain cover and all openings in a closed position at all times except for filling, removal, inspection, sampling or pressure relief events related to safety considerations

BCM Waste Containers	**Applicable Requirements**					**Streamlined Applicable Requirement**
	Pharma MACT (40 CFR Part 63 Subpart GGG)	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**PSD BACT Standards (326 IAC 2-2-3)**	
	inspection, sampling or pressure relief events related to safety considerations [40 CFR 63.1256(d)(1)(iii)]					
Exceptions	All wastewater containers maintained in closed position at all times except for filling, removal, inspection, sampling or pressure relief events related to safety considerations [63.1256(d)(1)(iii)]	All wastewater containers maintained in closed position at all times except for filling, removal, inspection, sampling or pressure relief events related to safety considerations [40 CFR 63.2485(a), 63.135(b)(3)]	All wastewater containers maintained in closed position at all times except for filling, removal, inspection, sampling or pressure relief events related to safety considerations [40 CFR 63.135(b)(3)]	All waste containers maintained in closed position at all times except for filling, removal, performing routine activities other than transfer of regulated-material or pressure relief events related to safety considerations [63.688(b), 63.922(d)]	All wastewater containers maintained in closed position at all times except for filling, removal, inspection, sampling or pressure relief events related to safety considerations [63.1256(d)(1)(iii)]	All waste containers maintained in closed position at all times except for filling, removal, performing routine activities other than transfer of regulated-material or pressure relief events related to safety considerations
Work Practice Standards – Small Waste Container Inspections	Inspections for DOT compliant wastewater containers > 0.1 m^3 to < 0.42 m^3 not operated under negative pressure: • Initial and semiannual visual inspections for improper work practices and control equipment failures; repairs shall be initiated within 5/15 days, unless delay of repair allowed [40 CFR 63.1256(d)(1)(ii)(A), 63.1258(h)(2)(iii), 63.1256(d)(5)] **For Waste Containers > 0.1 m^3 to < 0.42 m^3 that are not DOT containers and not operated under negative pressure:** • Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR	Inspections for DOT compliant wastewater containers > 0.1 m^3 to < 0.42 m^3 not operated under negative pressure: • Initial and semiannual visual inspections for improper work practices and control equipment failures; repairs shall be initiated within 5/15 days, unless delay of repair allowed [40 CFR 63.2485(a), 63.135(f), 63.140] **For Waste Containers > 0.1 m^3 to < 0.42 m^3 that are not DOT containers not operated under negative pressure:** • **Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair;**	Inspections for DOT compliant wastewater containers > 0.1 m^3 to < 0.42 m^3 not operated under negative pressure: • Initial and semiannual visual inspections for improper work practices and control equipment failures; repairs shall be initiated within 5/15 days, unless delay of repair allowed [40 CFR 63.135(e), (f), 63.140] **For Waste Containers that are not DOT containers not operated under negative pressure:** • **Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not**	• If container not emptied within 24 hours after container arrives at facility, conduct initial visual inspection for visible cracks, holes, gaps, or other open spaces into the interior of the container. • Annual visual inspections for visible cracks, holes, gaps or other open spaces into the interior of the container • Repair of defects shall be initiated within 24 hours and completed within 5 days after detection; otherwise must remove regulated material from container until defect is repaired [63.922(e), 63.923(e), and 63.926(a)]	Inspections for DOT compliant wastewater containers > 0.1 m^3 to < 0.42 m^3 not operated under negative pressure: • Initial and semiannual visual inspections for improper work practices and control equipment failures; repairs shall be initiated within 5/15 days, unless delay of repair allowed **For Waste Containers > 0.1 m^3 to < 0.42 m^3 that are not DOT containers and not operated under negative pressure:** • Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not	Inspections for DOT compliant wastewater containers > 0.1 m^3 to < 0.42 m^3 not operated under negative pressure: • Initial and semiannual visual inspections for improper work practices and control equipment failures; repairs shall be initiated within 5/15 days, unless delay of repair allowed **For Waste Containers > 0.1 m^3 to < 0.42 m^3 that are not DOT containers and not operated under negative pressure:** • Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule

BCM Waste Containers	Applicable Requirements					Streamlined Applicable Requirement
	Pharma MACT (40 CFR Part 63 Subpart GGG)	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**PSD BACT Standards (326 IAC 2-2-3)**	
	63.1256(d)(1)(ii)(B), 63.1258(h)(2)(iii), (4), (6), and (7)]	**inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.2485(a), 63.135(b)(1), 63.148(g) and (h)]**	**required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.135(b)(2), 63.148(g) and (h)]**		required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect	of unsafe or difficult to inspect
Work Practice Standards – Large Waste Container Inspections	Inspections for Containers > 0.42 m^3 not operated under negative pressure: • Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.1256(d)(1)(i)(A), 63.1258(h)(2)(iii), (4), (6), and (7)] • Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.1256(d)(1)(ii)(B), 63.1258(h)(2)(iii), (4), (6), and (7)]	Control Options for wastewater containers > 0.42 m^3 not operated under negative pressure: • Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.2485(a), 63.135(e), (f), 63.140] • Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.2485(a),	Control Options for wastewater containers > 0.42 m^3 not operated under negative pressure: • Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.135(e), (f), 63.140] • Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect [40 CFR 63.135(b)(1), 63.148(g) and (h)]	• If container not emptied within 24 hours after container arrives at facility, conduct initial visual inspection for visible cracks, holes, gaps, or other open spaces into the interior of the container. • Annual visual inspections for visible cracks, holes, gaps or other open spaces into the interior of the container • Repair of defects shall be initiated within 24 hours and completed within 5 days after detection; otherwise must remove regulated material from container until defect is repaired [63.922(e), 63.923(e), and 63.926(a)]	Inspections for Containers > 0.42 m^3 not operated under negative pressure: • Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect • Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect	Inspections for Containers > 0.42 m^3 not operated under negative pressure: • Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect • Initial M21 and semiannual visual inspections of cover for visible, audible, olfactory leaks; repair leaks within 5/15 days, unless delay of repair; inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe or difficult to inspect

BCM Waste Containers	Applicable Requirements					Streamlined Applicable Requirement
	Pharma MACT (40 CFR Part 63 Subpart GGG)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)	OSWRO MACT (40 CFR 63 Subpart DD)	PSD BACT Standards (326 IAC 2-2-3)	
		63.135(b)(1), 63.148(g) and (h)]				
Record Keeping and Reporting						
Record	• Records of inspections performed and leaks detected • List, explanation, inspection plan for unsafe and difficult to inspect [40 CFR 63.1259(i)] • Keep inspection records for period of 5 years [40 CFR 63.10]	• Records of inspections performed and leaks detected • List, explanation, inspection plan for unsafe and difficult to inspect [40 CFR 63.147(b)(1),(6)] • Keep inspection records for period of 5 years [40 CFR 63.10]	• Records of inspections performed and leaks detected • List, explanation, inspection plan for unsafe and difficult to inspect [40 CFR 63.147(b)(1),(6)] • Keep inspection records for period of 5 years [40 CFR 63.10]	Records of inspections performed and leaks detected [40 CFR 63.696(e)]	• Records of inspections performed and leaks detected • List, explanation, inspection plan for unsafe and difficult to inspect	• Records of inspections performed and leaks detected • List, explanation, inspection plan for unsafe and difficult to inspect • Keep inspection records for 5 years
Reports	For tank cover Method 21 inspections and visual inspections that detect a leak, report leaking equipment ID and associated leak details [40 CFR 63.1260(g)(2)(iii), 63.1259(i)(7)]	For control equipment failures, report leaking equipment ID and associated leak details [40 CFR 63.146(c)]	For control equipment failures, report leaking equipment ID and associated leak details [40 CFR 63.146(c)]	None	Report leaking equipment ID and associated leak details when leaks detected	Report leaking equipment ID and associated leak details when leaks detected

1: The MON applies if an IDS accepts Group 1 wastewater from a miscellaneous organic chemical manufacturing process unit (MCPU).
2: The HON applies if an IDS accepts Group 1 wastewater from a chemical organic manufacturing process unit (CMPU).

D.12: T49 Liquid Waste Incinerator

Background and Description

The T49 liquid waste incinerator is designed to treat high Btu liquids (primary waste) and low Btu liquids (secondary waste).

Types of Emission Units and Pollution Control Equipment

The T49 liquid waste incinerator consists of a primary combustion chamber and vertical up-fired secondary combustion chamber (SCC), wet quench system, condenser/absorber, Hydro-sonic scrubber and a stack with continuous emissions and parametric monitoring.

Insignificant Activities

The T49 liquid waste incinerator is not considered an insignificant activity pursuant to 326 IAC 2-7-1.

Federal Rule Applicability

New Source Performance Standards:

There are no New Source Performance Standards (NSPS) that apply to the incinerator.

40 CFR Part 60 Subpart Cb (Emission Guidelines and Compliance Times for Large Municipal Waste Combustors That are Constructed On or Before September 20, 1994) – This rule does not apply because the T49 liquid waste incinerator does not have the capability to combust solid wastes and therefore does not combust municipal waste.

40 CFR Part 60 Subpart Ce (Emission Guidelines and Compliance Times for Hospital / Medical / Infectious Waste Incinerators) – This rule does not apply because the T49 liquid waste incinerator does not have the capability to combust solid wastes and therefore will not combust hospital, medical, or infectious waste.

40 CFR Part 60 Subpart E (Standards of Performance for Incinerators) – This rule does not apply because the T49 liquid waste incinerator does not have the capability to combust solid wastes and therefore will not combust solid waste as defined in 60.51(b).

40 CFR Part 60 Subpart Ea (Standards of Performance for Municipal Waste Combustors for Which Construction Commenced After December 20, 1989 and On or Before September 20, 1994) – This rule does not apply because the T49 liquid waste incinerator has a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

40 CFR Part 60 Subpart Eb (Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996) – This rule does not apply because the T49 liquid waste incinerator has a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

40 CFR Part 60 Subpart Ec (Standards of Performance for Hospital / Medical / Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996) – This rule does not apply because the T49 liquid waste incinerator has a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

40 CFR Part 60 Subpart AAAA (Standards of Performance for Small Municipal Waste Combustion Units) – This rule does not apply because the T49 liquid waste incinerator has a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart, as provided in 40 CFR 60.1020(e).

40 CFR Part 60 Subpart BBBB (Standards of Performance for Small Municipal Waste Combustion Units) – This rule does not apply because the T49 liquid waste incinerator has a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart, as provided in 40 CFR 60.1555(e).

40 CFR Part 60 Subpart CCCC (Standards of Performance for Commercial and Industrial Solid Waste Incinerators) – This rule does not apply because the T49 liquid waste incinerator is subject to requirements under 40 CFR 63, Subpart EEE, as provided in 40 CFR 60.2020(g).

40 CFR Part 60 Subpart DDDD (Standards of Performance for Commercial and Industrial Solid Waste Incinerators) – This rule does not apply because the T49 liquid waste incinerator is subject to requirements under 40 CFR 63, Subpart EEE, as provided in 40 CFR 60.2555(g).

40 CFR Part 60 Subpart EEEE (Standards of Performance for Other Solid Waste Incinerators) – This rule does not apply because the T49 liquid waste incinerator is subject to requirements under 40 CFR 63, Subpart EEE, as provided in 40 CFR 60.2887(e).

40 CFR Part 60 Subpart FFFF (Standards of Performance for Other Solid Waste Incinerators) – This rule does not apply because the T49 liquid waste incinerator is subject to requirements under 40 CFR 63, Subpart EEE, as provided in 40 CFR 60.2993(e).

40 CFR Part 60 Appendix B Performance Specification 16 (Predictive Emission Monitoring Systems) - This rule does not apply to the T49 incinerator because permit condition D.12.15(a) requires operation of continuous parametric monitoring systems, including combustion air flow rate. Because the T49 combustion air flow rate monitor is part of a parametric monitoring system, instead of a predicative emission monitoring system, it is not subject to Performance Specification 16.

National Emission Standards for Hazardous Air Pollutants (NESHAP):

40 CFR Part 61 Subpart C (NESHAP for Beryllium) – Although Subpart C is applicable to incinerators, USEPA has determined that this rule applies only to incinerators burning beryllium containing waste that was generated by a foundry, extraction plant, ceramic plant, propellant plant, or machine shop which is subject to Subpart C. [See, May 22, 1997, memorandum from R. Douglas Neeley of U.S. EPA, Region 4]. Since the beryllium-containing wastes that may be combusted in the incinerator do not originate from one of the five sources listed 40 CFR 61, Subpart C, the rule does not apply.

40 CFR Part 61 Subpart E (NESHAP for Mercury) – This rule does not apply because the T49 liquid waste incinerator does not incinerate wastewater treatment plant sludge.

40 CFR Part 63 Subpart I (NESHAP for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks) – Although the source is a major source of hazardous air pollutants (HAPs), 40 CFR 63 Subpart I, does not apply because the incinerator is not associated with any of the applicable processes listed under 40 CFR 63.190(b)(1) through (b)(6).

40 CFR Part 63 Subpart DD (NESHAP for Off-Site Waste and Recovery Operations) – The requirements of 40 CFR 63 Subpart DD applies to the T49 liquid waste incinerator because the plant site is a major source of HAP emissions, receives off-site material as specified in 40 CFR 63.680(b), and the waste management operation is one of the operations specified in 40 CFR 63.680(a)(2)(i) through (a)(2)(vi).

40 CFR 63 Subpart EEE (NESHAP for Hazardous Waste Combustors) – The T49 liquid waste incinerator is subject to the requirements of 40 CFR 63 Subpart EEE because this incinerator burns hazardous waste. The source shall comply with all applicable requirements under this rule.

State Rule Applicability

326 IAC 1-6-3 (Preventive Maintenance Plan) – The T49 liquid waste incinerator is required to have a preventive maintenance plan (PMP) pursuant to 326 IAC 1-6-3. The Operation and Maintenance Plan (O&M Plan) required under the HWC MACT standards shall satisfy the requirements of the PMP.

326 IAC 2-2 (Prevention of Significant Deterioration) – As part of the Title V permitting process, the source underwent PSD review for its BCM operations and BCM support operations, which includes the T49 liquid waste incinerator. The best available control technology (BACT) and modeling analyses are required under the PSD requirements. The following table summarizes the BACT for the T49 liquid waste incinerator:

Facility	PSD Pollutants	BACT Control Devices	BACT Limits
T49 liquid waste incinerator	VOC	Good combustion practice; HWC MACT	100 ppmvdc CO
	CO	Good combustion practice; HWC MACT	100 ppmvdc
	NOx	Good combustion practice	975 ppmvdc
	SO2	Caustic scrubber	500 ppmvdc
	Fluorides	Caustic scrubber	32 ppmvdc

326 IAC 5-1-2 (Opacity Limitations) – Opacity shall not exceed an average of 40% in any one 6 minute averaging period. Opacity shall not exceed 60% for more than a cumulative total of fifteen minutes.

326 IAC 4-2 (Burning Regulations) – 326 IAC 4-2 does not apply because the incinerator is subject to emission limitations in 40 CFR 63, Subpart EEE.

326 IAC 6-3 (Process Operations) – 326 IAC 6-3 does not apply because the T49 liquid waste incinerator is exempted under 326 IAC 6-3-1(a).

326 IAC 7 (Sulfur Dioxide Emission Limitations) – 326 IAC 7 does not apply to the T49 liquid waste incinerator because the incinerator does not have the capability to burn fuel oil and therefore does not have SO2 emissions from the applicable fuel sources in 326 IAC 7.

326 IAC 8-5-3 (Miscellaneous Operations: Synthesized Pharmaceutical Manufacturing Operations) – 326 IAC 8-5-3 does not apply to the T49 liquid waste incinerator because it is not listed as one of the emission unit types defined in 326 IAC 8-5-3(a).

326 IAC 8-1-6 (State BACT Requirements) – As part of the Title V permitting process, the source elected to undergo PSD review for its BCM operations. These federal requirements satisfy the requirements of 326 IAC 8-1-6.

326 IAC 9 and 40 CFR 52, Subpart P (Carbon Monoxide Rules) – 326 IAC 9-1-2 does not apply because the incinerator is subject to carbon monoxide emission limitations in 40 CFR Part 63 Subpart EEE.

326 IAC 11-6 (Hospital/Medical/Infectious Waste Incinerators) – This rule does not apply to the T49 liquid waste incinerator because it does not combust hospital/medical/infectious waste as defined in 40 CFR Part 60 Subpart Ec.

326 IAC 11-7 (Municipal Waste Combustors) – This rule does not apply to the T49 liquid waste incinerator because it does not combust municipal waste as defined in 40 CFR Part 60 Subpart Cb.

326 IAC 15 (Lead Rules) – This rule does not apply to the source because the plant operations are not classified as one of the source types listed in 326 IAC 15-1-2.

Compliance Requirements

The following compliance activities are required for the T49 liquid waste incinerator:
1. Conduct performance tests;
2. Operate CEMS for CO, SO2, and NOx;
3. Continuously monitor the following operating parameters:
   (a) Atomizing air media pressure;
   (b) Primary and secondary waste feed viscosity;
   (c) Primary and secondary waste feed rate;
   (d) Combustion temperature;
   (e) Combustion air flow rate;
   (f) Mercury, semi-volatile metals and low-volatile metals feed rate;
   (g) Ash federate;
   (h) Chlorine feed rate;
   (i) Condenser/absorber flow rate, differential pressure, pH and percent solids; and
   (j) Hydro-sonic scrubber flow rate and equivalent differential pressure.

D.13: T149 Solid-Liquid Waste Incinerator

Background and Description

The T149 solid-liquid waste incinerator is designed to treat containerized waste (hazardous and non-hazardous), high Btu liquids (primary waste) and low Btu liquids (secondary waste).

Types of Emission Units and Pollution Control Equipment

The solid-liquid waste incinerator consists of a rotary kiln incinerator, an emergency backup motor to the rotary kiln drive system, and ancillary equipment. The solid-liquid waste incinerator consists of a rotary kiln and vertical up-fired secondary combustion chamber (SCC), wet ash handling system, NO_x abatement system, wet quench system, condenser/absorber, Hydro-sonic scrubber, induced draft (ID) fan and stack with continuous emissions and parametric monitoring. Ancillary equipment consists of a containerized waste receiving, storage, and handling area, and containerized waste and liquid feed systems. Primary and secondary wastes are stored and handled in existing waste holding tanks.

Insignificant Activities

The solid-liquid waste incinerator is not considered an insignificant activity pursuant to 326 IAC 2-7-1.

Federal Rule Applicability

New Source Performance Standards:

There are no New Source Performance Standards (NSPS) that apply to the incinerator.

40 CFR Part 60 Subpart Cb (Emission Guidelines and Compliance Times for Large Municipal Waste Combustors That are Constructed On or Before September 20, 1994) – This rule does not apply because the solid-liquid waste incinerator does not combust municipal waste and the construction date was after the applicable date of September 20, 1994.

<u>40 CFR Part 60 Subpart Ce (Emission Guidelines and Compliance Times for Hospital / Medical / Infectious Waste Incinerators)</u> – This rule does not apply because the solid-liquid waste incinerator does not combust hospital, medical, or infectious waste.

<u>40 CFR Part 60 Subpart E (Standards of Performance for Incinerators)</u> – This rule does not apply because the incinerator does not combust solid waste as defined in 60.51(b).

<u>40 CFR Part 60 Subpart Ea (Standards of Performance for Municipal Waste Combustors for Which Construction Commenced After December 20, 1989 and On or Before September 20, 1994)</u> – This rule does not apply because the T149 solid-liquid waste incinerator has a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

<u>40 CFR Part 60 Subpart Eb (Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996)</u> – This rule does not apply because the T149 solid-liquid waste incinerator has a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

<u>40 CFR Part 60 Subpart Ec (Standards of Performance for Hospital / Medical / Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996)</u> – This rule does not apply because the T149 solid-liquid waste incinerator has a permit under section 3005 of the solid waste disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

<u>40 CFR Part 60 Subpart AAAA (Standards of Performance for Small Municipal Waste Combustion Units)</u> – This rule does not apply because the T149 solid-liquid waste incinerator has a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart, as provided in 40 CFR 60.1020(e).

<u>40 CFR Part 60 Subpart BBBB (Standards of Performance for Small Municipal Waste Combustion Units)</u> – This rule does not apply because the T149 solid-liquid waste incinerator has a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart, as provided in 40 CFR 60.1555(e).

<u>40 CFR Part 60 Subpart CCCC (Standards of Performance for Commercial and Industrial Solid Waste Incinerators)</u> – This rule does not apply because the T149 solid-liquid waste incinerator is subject to requirements under 40 CFR 63, Subpart EEE, as provided in 40 CFR 60.2020(g).

<u>40 CFR Part 60 Subpart DDDD (Standards of Performance for Commercial and Industrial Solid Waste Incinerators)</u> – This rule does not apply because the T149 solid-liquid waste incinerator is subject to requirements under 40 CFR 63, Subpart EEE, as provided in 40 CFR 60.2555(g).

<u>40 CFR Part 60 Subpart EEEE (Standards of Performance for Other Solid Waste Incinerators)</u> – This rule does not apply because the T149 solid-liquid waste incinerator is subject to requirements under 40 CFR 63, Subpart EEE, as provided in 40 CFR 60.2887(e).

<u>40 CFR Part 60 Subpart FFFF (Standards of Performance for Other Solid Waste Incinerators)</u> – This rule does not apply because the T149 solid-liquid waste incinerator is subject to requirements under 40 CFR 63, Subpart EEE, as provided in 40 CFR 60.2993(e).

<u>40 CFR Part 60 Appendix B Performance Specification 16 (Predictive Emission Monitoring Systems)</u> - This rule does not apply to the T149 solid-liquid waste incinerator, because the T149 solid-liquid waste incinerator does not operate any predictive emission monitoring systems (PEMS).

National Emission Standards for Hazardous Air Pollutants (NESHAP):

40 CFR Part 61 Subpart C (National Emission Standard for Beryllium) – Although Subpart C is applicable to incinerators, USEPA has determined that this rule applies only to incinerators burning beryllium containing waste that was generated by a foundry, extraction plant, ceramic plant, propellant plant, or machine shop which is subject to Subpart C [May 22, 1997, memorandum from R. Douglas Neeley of U.S. EPA, Region 4]. Since the beryllium-containing wastes that may be combusted in the incinerator do not originate from one of the five sources listed 40 CFR Part 61 Subpart C, the rule does not apply.

40 CFR Part 61 Subpart E (National Emission Standard for Mercury) – This rule does not apply because the T149 solid-liquid waste incinerator does not incinerate wastewater treatment plant sludge.

40 CFR Part 63 Subpart I (National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks) – Although the source is a major source of hazardous air pollutants (HAPs), 40 CFR 63, Subpart I, does not apply because the solid-liquid waste incinerator is not any of the applicable processes listed under 40 CFR 63.190(b)(1) through (b)(6).

40 CFR Part 63 Subpart DD (National Emission Standards for Off-Site Waste and Recovery Operations) – 40 CFR Part 63 Subpart DD applies to the solid-liquid waste incinerator because the plant site is a major source of HAP emissions, receives off-site material as specified in 40 CFR 63.680(b), and the waste management operation is one of the operations specified in 40 CFR 63.680(a)(2)(i) through (a)(2)(vi).

40 CFR Part 63 Subpart EEE (National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors) – The solid-liquid waste incinerator is subject to the requirements of 40 CFR Part 63 Subpart EEE because the incinerator is a hazardous waste incinerator. The source shall comply with all applicable requirements under this rule.

State Rule Applicability

326 IAC 1-6-3 (Preventive Maintenance Plan) – The source is required to have a preventive maintenance plan pursuant to 326 IAC 1-6-3. The Operation and Maintenance Plan (O&M Plan) required under the HWC MACT standards shall satisfy the requirements of the PMP.

326 IAC 2-2 (Prevention of Significant Deterioration) – As part of the Title V permitting process, the source underwent PSD review for its BCM operations and BCM support operations, which includes the solid-liquid waste incinerator. The following table summarizes the BACT for the solid-liquid waste incinerator:

Facility	PSD Pollutants	BACT Control Devices	BACT Limits
T 149 Solid-Liquid Waste Incinerator	VOC	Good combustion practice; HWC MACT	100 ppmvdc CO
	CO	Good combustion practice; HWC MACT	100 ppmvdc
	NOx	Selective Non-catalytic reduction	170 ppmvdc
	SO2	Caustic scrubber	400 ppmvdc
	Fluorides	Caustic scrubber	32 ppmvdc

326 IAC 5-1-2 (Opacity Limitations) – Opacity shall not exceed an average of 40% in any one 6 minute averaging period. Opacity shall not exceed 60% for more than a cumulative total of fifteen minutes.

326 IAC 4-2 (Burning Regulations) – 326 IAC 4-2 does not apply because the incinerator is subject to emission limitations in 40 CFR 63, Subpart EEE.

326 IAC 6-3 (Process Operations) – 326 IAC 6-3 does not apply because the solid-liquid waste incinerator is exempted under 326 IAC 6-3-1(a).

326 IAC 7 (Sulfur Dioxide Emission Limitations) – 326 IAC 7 applies to the solid-liquid waste incinerator because its SO_2 potential to emit exceeds 25 tons per year. Pursuant to 326 IAC 7-1.1-2 (SO_2 Rules), the SO_2 emissions from the combustion of fuel oil during the deslagging process in the solid-liquid waste incinerator shall not exceed 0.5 pounds per million British thermal units (lbs/MMBtu).

326 IAC 8-5-3 (Miscellaneous Operations: Synthesized Pharmaceutical Manufacturing Operations) – 326 IAC 8-5-3 does not apply to the solid-liquid waste incinerator because it is not defined as any of the emission unit types listed in 326 IAC 8-5-3(a).

326 IAC 8-1-6 (State BACT Requirements) – As part of the Title V permitting process, the source elected to undergo PSD review for its BCM operations. These federal requirements satisfy the requirements of 326 IAC 8-1-6.

326 IAC 9 (Carbon Monoxide Rules) – 326 IAC 9-1-2 does not apply because the incinerator is subject to carbon monoxide emission limitations in 40 CFR Part 63 Subpart EEE.

326 IAC 11-6 (Hospital/Medical/Infectious Waste Incinerators) – This rule does not apply to the rotary solid-liquid waste incinerator because it has a permit under section 3005 of the Solid Waste Disposal Act. Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

326 IAC 11-7 (Municipal Waste Combustors) – This rule does not apply to the solid-liquid waste incinerator because it does not combust municipal waste as defined in 40 CFR Part 60 Subpart Cb.

326 IAC 15 (Lead Rules) – This rule does not apply to the source because the plant operations are not classified as one of the source types listed in 326 IAC 15-1-2.

Compliance Requirements

The following compliance activities are required for the solid-liquid waste incinerator:

(1) Conduct performance tests;

(2) Operate CEMS for CO, SO2, and NOx;

(3) Sampling and analysis of fuel oil; and

(4) Continuously monitor the following operating parameters:

- (a) Primary and secondary waste feed to primary combustion chamber;
- (b) Solid feed rate;
- (c) Primary combustion chamber temperature;
- (d) Primary and secondary waste feed to secondary combustion chamber;
- (e) Stack gas flow rate;
- (f) Waste feed viscosity;
- (g) Waste atomizing pressure;
- (h) Mercury, semi-volatile metal and low-volatile metal feed rate in all feed streams;
- (i) Low-volatile metal feed rate in all pumpable feed streams;
- (j) Ash feed rate;
- (k) Total chlorine feed rate;
- (l) Condenser/absorber pressure drop, liquid feed pressure, scrubber water pH, scrubber liquid flow rate; and
- (m) Hydo-sonic scrubber equivalent pressure drop, conductivity, feed rate, and pH.

D.14: RTO Control System Operations

Background and Description

Tippecanoe Laboratories utilizes an extensive emission control system to reduce point source emissions from bulk chemical manufacturing (BCM) (currently, including buildings T27, T29, T31, T31A, T99, and T100) and parts of the BCM support operations (currently, including tank module T146). The system consists of two major elements. One is an elaborate fume transport system, also known as a closed-vent system, which consists of a series of large-diameter fiberglass ductwork, fans, and instrumentation. This system provides the transport of the fumes from the manufacturing building roof vents and tank modules to the second system, the Regenerative Thermal Oxidizers (RTO). The site operates two identical RTO systems. One RTO is in operation while the other is in a maintenance shutdown or on standby.

Types of Emission Units and Pollution Control Equipment

The RTOs control VOC and VOHAP emissions from the fume streams exhausted from the BCM and BCM support operations. In addition, the RTOs oxidize carbon monoxide (CO) emissions that may be emitted by BCM process equipment. Good combustion design and practices minimize CO and nitrogen oxide (NOx) emissions. The RTOs are also equipped with caustic scrubbing systems used to control hydrogen halide and halogen (HX) emissions from the BCM production and support operations as well as HX formed during combustion. The combustion chamber of each RTO and its associated scrubber make up the RTO control system.

Insignificant Activities

The RTO control system is not considered an insignificant activity pursuant to 326 IAC 2-7-1(21).

Federal and State Rule Applicability/Streamlining Strategy

The RTO control system is utilized to meet the requirements of the following air pollution control requirements dealing with volatile organic compound emissions (VOC), volatile organic hazardous air pollutant emissions (VOHAP), and/or hydrogen halides and halogens (HX):

1. 40 CFR Part 60 Subpart Kb, New Source Performance Standards for VOC Liquid Storage Vessels
2. 40 CFR Part 63 Subpart DD, Off-site Waste and Recovery Operations (OSWRO) MACT
3. 40 CFR Part 63 Subpart GGG, Pharmaceutical Production (Pharma) MACT
4. 40 CFR Part 63 Subpart FFFF, Miscellaneous Organic Chemical Manufacturing NESHAP (MON)
5. 40 CFR Part 63 Subpart F (which incorporates Subparts G and H by reference), NESHAP from the Synthetic Organic Chemical Manufacturing Industry (herein referred to as the HON)
6. 326 IAC 8-5-3, Indiana RACT rule applicable to synthesized pharmaceutical manufacturing facilities; and
7. 326 IAC 2-2, PSD Best Available Control Technology (BACT) Requirements

Multiple Requirement Streamlining and BACT Determination

The applicable regulations have similar standards and performance objectives which provide an opportunity for the Title V permit to consolidate the requirements into streamlined permit terms that comprehensively address all the requirements. Streamlining of overlapping requirements is authorized pursuant to 326 IAC 2-7-24.

The purpose of this streamlining is to demonstrate that the requirements of the RACT Rule for Synthesized Pharma Manufacturing [326 IAC 8-5-3], OSWR MACT [40 CFR Part 63 Subpart DD] and flexible PSD permit requirements can be streamlined into the more stringent applicable requirements of the Pharma MACT [40 CFR Part 63 Subpart GGG], MON [40 CFR Part 63 Subpart FFFF], and/or HON [40 CFR Part 63 Subparts F and G]. Based on the similarities between these standards, the flexible permit requirements identify the Pharma MACT requirements as the streamlined requirements. In any cases in which the MON or HON requirements are more stringent than the Pharma MACT, the requirements of the MON/HON are identified as the streamlined requirement. To the extent possible, the flexible PSD permit requirements mirror the Pharma MACT/MON/HON requirements.

RTO Operations – Alternative Operating Scenarios

The MON hydrogen halide and halogen (HX) emission standards and HON TOC and HX emission standards differ from the respective Pharma MACT standards. To account for this, Tippecanoe Laboratories has incorporated alternative operating scenarios to account for scenarios when such MON and/or HON emission standards apply.

The following table summarizes the requirements for the BCM Operations. The streamlining table contains the following sections and subsections:

Emission Limits and Standards
- TOC Point Source Emission Limits and Standards
- HX and Fluorides Point Source Emission Limits and Standards
- CO/NOx/SO2 Point Source Emission Limits and Standards
- Work Practice Standards – Closed Vent Systems
- Work Practice Standards – Bypass Systems in Closed Vent Systems
- Exceptions to Control Device and Closed Vent System Standards

Compliance Demonstration Methods
- TOC Continuous Emissions Monitoring Systems (CEMS) and parametric Continuous Monitoring System (CMS) Requirements (if complying with 20 ppmv TOC alternative standard)
- HX CEMS requirements (if complying with 20 ppmv HX alternative standard)
- CO/NOx/SO2 CEMS Requirements
- TOC Stack Testing Requirements (if complying with DRE standard)
- HX Stack Testing Requirements (if complying with DRE standard)
- RTO Parametric CMS and Other Parametric Monitoring Requirements
- Scrubber Parametric CMS Requirements
- Closed Vent System and Bypass System parametric CMS and Other Parametric

Record Keeping and Reporting Requirements

RTO Control System Operations: Streamlining Table

Affected Units Controlled by RTO	Applicable Rules							Streamlined Requirements	Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**PSD BACT Standards (326 IAC 2-2-3)**		**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**
Emission Limits and Standards										
TOC Point Source Emission Limits and Standards										
BCM and BCM Support Process Vents (D.6 and D.7)	For reactors, distillation operations, crystallizers, centrifuges and vacuum dryers: • Condensers must meet maximum outlet gas temperature requirement or equivalent controls [326 IAC 8-5-3(b)(1)] For air dryers and production equipment exhaust systems (local exhaust vents): • Achieve at least 90% controls for uncontrolled VOC emissions ≥ 330 lb/day [326 IAC 8-5-3(b)(2)(A)] • Reduce VOC emissions to 15 lbs/day or less for uncontrolled VOC emissions < 330 lb/day [326 IAC 8-5-3(b)(2)(B)]	N/A	• 20 ppm TOC, corrected to 3%O2 achieved from a stack test *AND* establish min temp from stack test [40 CFR 63.690(b), 63.693(f)(1)(i)(B) or (f)(1)(ii)(B), and 63.693(f)(3)(i)] or • Alternative operating parameter: 20 ppmv TOC avg. over 24-hr period via CEMS [40 CFR 63.690(b), 63.693(f)(1)(i)(B) or (f)(1)(ii)(B), and 63.693(f)(3)(iii)] or • 95% DRE (individual vent percent reduction standard) *AND* establish min temp from stack test [40 CFR 63.690(b), 63.693(f)(1)(i)(A) or (f)(1)(ii)(A), and 63.693(f)(3)(ii)] or • Maintain temp ≥ 760 F *AND* residence time ≥ 0.5 sec [40 CFR 63.690(b) and 63.693(f)(1)(iii)]	• 98% for process vents *AND* establish 24-hr avg. for min temp determined from worst case compliant stack test [40 CFR 63.2460(a),(b)(5)(ii), Table 2 to Subpart FFFF, 63.2450(e)(1), 63.988(c)(1), 63.988(b)(3), 63.997(e)(1)(iii)] or • Alternative Standard: 20 ppmv TOC via CEMS, avg. over the operating day, *AND* min time of ≥ 0.75 sec (or flow rate) and min temp of ≥ 816 C [40 CFR 63.2505(a)(1)(i)(A) and (b)(8) 63.1258(b)(5)(ii)(A)] and • If an MCPU that includes batch process vents is also part of a CMPU, must comply with the batch process vent requirements in the MON and continue to comply with the HON requirements that are applicable to the CMPU and associated equipment. [40 CFR 63.2535(a)(1)]	See HON Alternative Operating Scenarios portion of this table	• 98% DRE for individual vents > 25 tpy AND establish 24-hr avg. for min temp determined from worst-case compliant stack test [40 63.1254(a)(3)(i) and 63.1258(b)(1)(vii)] or • Alternative Standard: 20 ppmv TOC via CEMS, avg. over 24-hr period *AND* min time of ≥ 0.75 sec (or flow rate) and min temp of ≥ 816 C [40 CFR 63.1254(c), 63.1258(b)(2) and 63.1258(b)(5)(ii)(A)]	• Alternative Standard: No more than 20 ppmv VOC/VOHAP via TOC CEMS, based on 24-hour daily average *AND* min residence time of ≥ 0.75 sec (or flow rate) and min temp of ≥ 816°C (≥ 1500°F) or • Reduce VOC/VOHAP by a control efficiency of 98% or more *AND* establish 24-hr average parameters for min temp determined from worst-case compliant stack test		N/A; Alternative Operating Scenario is for HX Standard only	For Continuous Process Vents: • 98% for process vents *AND* establish daily avg. for min temp determined from worst case compliant stack test [40 CFR 63.113(a)(2), 114(a)(1)(i) and (e), 63.118(a)(2)] or • 20 ppmv TOC, avg. over the operating day, dry basis, corrected to 3% O2 *AND* establish daily avg. for min temp determined from worst case compliant stack test [40 CFR 63.113(a)(2), 114(a)(1)(i) and (e) , 63.118(a)(2)] or • Request approval for monitoring other parameters [40 CFR 63.114(c), 63.151(f), 63.152(e)(1)] For Batch Process Vents: • None [40 CFR 63.100(j)(4)]
BCM Solvent Tanks (D.9)	• Provide a vapor balance system or equivalent control that is at least 90% effective in reducing emissions from truck or railcar deliveries to storage tanks > 7,500L (2,000 gallons) that store VOC with vapor pressures > 28 kPa (4.1 psi) at 20°C and • Install pressure/vacuum conservation vents set at ± 0.2 kPa unless a more effective control system is used [326 IAC 8-5-3(b)(3)]	• 95% DRE or • Residence Time > 0.75 sec and temp > 816C or • Other parameters determined from a design analysis [60.112b(a) and (a)(3)(iii), and 60.113b(c)(1)(i)]	N/A	Meet requirements above for process vents [40 CFR 63.2450(c)(2)]	• **Reduce total organic HAP by ≥95% [40 CFR 63.119(e)(1)]** or • **Demonstrate ≥95% reduction standard by design evaluation demonstrating that control device provides minimum residence time of 0.5 seconds at minimum temperature of 760°C [40 CFR 63.120(d)(1)(i)]**	• **95% DRE AND min temp from worst case stack test for tanks ≥75 m3, VP ≥13.1kPa** [40 CFR 63.1253(c)(1)(i)] or • **Maintain time ≥ 0.5 sec AND temp ≥ 760 C for solvent tanks ≥75 m3, VP ≥13.1kPa [40 CFR 63.1253(c)(2)]** or • Alternative Standard: 20 ppmv TOC avg. over 24-hr period AND min time of ≥ 0.5 sec (or flowrate) and min temp of ≥ 760 C [40 CFR 63.1253(d), 63.1258(b)(2) and 63.1258(b)(5)(ii)(A)]			N/A; Alternative Operating Scenario is for HX Standard only	**N/A; no Alternative Operating Scenario needed for HON solvent storage tanks**
BCM Waste Tanks (D.10)	• Provide a vapor balance system or equivalent control that is at least 90% effective in reducing emissions from truck	• 95% DRE or • Residence Time > 0.75 sec and temp > 816C or	• 20 ppm TOC, corrected to 3%O2 achieved from a stack test AND establish min temp from stack test [40 CFR 63.962(a)(3)(ii), 63.962(b)(3)(ii)(A),	• 95% DRE achieved via stack testing AND establish min temp from stack test; or • Reduce TOC outlet emissions to ≤ 20 ppmv	• 95% DRE achieved via stack testing AND establish min temp from stack test; or • Reduce TOC outlet	• 95% DRE achieved via stack testing *AND* establish min temp from stack test[63.1256(b)(2), 62.1256(e)(1)(ii), and 63.1256(h)(2)(i)(A)]			N/A; Alternative Operating Scenario is for HX Standard only	**N/A; no Alternative Operating Scenario needed for HON waste tanks**

Affected Units Controlled by RTO	Applicable Rules							Streamlined Requirements	Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	OSWRO MACT (40 CFR 63 Subpart DD)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)	Pharma MACT (40 CFR Part 63 Subpart GGG)	PSD BACT Standards (326 IAC 2-2-3)		MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)
	or railcar deliveries to storage tanks > 7,500L (2,000 gallons) that store VOC with vapor pressures > 28 kPa (4.1 psi) at 20°C and • Install pressure/vacuum conservation vents set at ± 0.2 kPa unless a more effective control system is used [326 IAC 8-5-3(b)(3)]	• Other parameters determined from a design analysis [60.112b(a) and (a)(3)(iii), and 60.113b(c)(1)(i)]	63.693(f)(1)(i)(B) or (f)(1)(ii)(B), and 63.693(f)(3)(ii)] or • Alternative operating parameter: 20 ppmv TOC avg. over 24-hr period via CEMS [40 CFR 63.962(a)(3)(ii), 63.962(b)(3)(ii)(A), 63.693(f)(1)(i)(B) or (f)(1)(ii)(B), and 63.693(f)(3)(iii)] or • 95% DRE (individual vent percent reduction standard) AND establish min temp from stack test [40 CFR 63.962(a)(3)(ii), 63.962(b)(3)(ii)(A), 63.693(f)(1)(i)(A), and 63.693(f)(3)(iii)] or • Maintain temp > 760 F AND residence time > 0.5 sec [40 CFR 63.962(a)(3)(ii), 63.962(b)(3)(ii)(A), and 63.693(f)(1)(iii)]	TOC corrected to 3% O2 or • Minimum residence time of 0.5 seconds at a minimum temperature of 760 °C [40 CFR 63.2485/MON Table 7, 63.139(c)(1)]	emissions to ≤ 20 ppmv TOC corrected to 3% O2 or • Minimum residence time of 0.5 seconds at a minimum temperature of 760 °C [40 CFR 63.139(c)(1)]	or • 20 ppmv achieved via stack testing *AND* establish min temp from stack test [40 CFR 63.1256(b)(3)(ii), 63.1256(e)(1)(ii), and 63.1256(h)(2)(i)(B)] or • **Maintain residence time ≥ 0.5 sec *AND* temp ≥ 760C [40 CFR 63.1256(b)(3)(ii), 63.1256(e)(1)(ii), and 63.1256(h)(2)(i)(C)]**				
BCM Individual Drain Systems (IDSs) to Control Device (D.8)	N/A	N/A							N/A; Alternative Operating Scenario is for HX Standard only	**N/A; no Alternative Operating Scenario needed for HON IDSs**
Transfer Racks (D.20)	N/A	N/A	N/A	**Meet requirements above for process vents [40 CFR 63.2450(c)(2)]**	See the HON Alternative Operating Scenarios portion of this table.	N/A			N/A; Alternative Operating Scenario is for HX Standard only	• **If HON Group 1 continuous process vents are present, meet requirements for continuous process vents for the combined stream. [40 CFR 63.112(e)(3)(ii)]** or • 98% *AND* establish 24-hr avg. for min temp determined from worst case compliant stack test [40 CFR 63.126(b)(1)] or • 20 ppmv TOC, avg. over the operating day, dry basis, corrected to 3% O2 [40 CFR 63.126(b)(1)] **and** • Only load to tank trucks and rail cars that have current certification with the U.S. Department of Transportation pressure test requirements or have been vapor tested within the last 12-months. Only load to tank trucks or rail cars compatible with and connected to the vapor collection system [40 CFR 63.126(e) (f) (g)]
HX Point Source Emission Limits and Standards										
BCM and BCM Support Process Vents (D.6 and D.7)	N/A	N/A	N/A	See the MON Alternative Operating Scenarios portion of this table.	See the HON Alternative Operating Scenarios portion of this table.	• 20 ppmv HX *AND* establish 24-hr avg for min scrubber liquid flow rate or pressure drop and min pH of effluent scrubber liquid	• Reduce HX emissions by at least 98% *AND* for establish 24-hr avg min scrubber liquid flow rate or pressure drop, and min scrubber effluent pH from worst case compliant stack test or		• Alternative Standard: 20 ppmv hydrogen halide and halogen HAP, avg. over the operating day, 63.2505(a)(1)(i)(B) and	• 95% hydrogen halides and halogens *AND* establish 24-hr avg. for min scrubber pH and liquid flow, determined from worst case compliant stack test

Affected Units Controlled by RTO	Applicable Rules							Streamlined Requirements	Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**PSD BACT Standards (326 IAC 2-2-3)**		**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**
						from worst case compliance stack test [40 CFR 63.1254(a)(1)(ii)(A), 63.1257(d)(1)(iii), (a)(6), (b), 63.1258(b)(2), (b)(5)(ii)(A)] or • 98% DRE *AND* for min scrubber liquid flow rate or pressure drop and min pH of effluent scrubber liquid from worst case compliant stack test [40 CFR 63.1254(a)(3)(i), 63.1257(d)(1)(ii), (b), 63.1258(b)(2)] or • Alternative Standard: 20 ppmv HX, measured as HCl via CEMS avg. over 24-hr block period *AND* min residence time of ≥ 0.75 sec (or flowrate) and min temp of ≥ 816 C [63.1254(c), 63.1257(a)(5), 63.1258(b)(2), (b)(5)]	• Alternative Standard: Hydrogen halide and halogen emissions shall be controlled by a caustic scrubbing system to achieve no more than 20 parts per million (ppmv) based on a 24-hourdaily average • The following maximum flowrate may be used to demonstrate the residence time is > 0.75 sec: o Max Flowrate, cfm = volume of retention chamber, scf / residence time, sec o Max Flowrate, cfm = 2504.7 scf / 0.75 sec o Max Flowrate, cfm = 3340 scf/sec		(b)(8) 63.1258(b)(5)(ii)(A)] or • 99% *AND* establish 24-hr avg. for min scrubber effluent pH, min scrubber liquid flow and max inlet gas flow determined from worst case compliant stack test [40 CFR 63.2465(a) and (c), Table 3 to Subpart FFFF of Part 63, 63.2450(e)(3), 63.994(c)(1), 63.998(a)(2) and (b), 63.997(e)(1)(iii)] or • 0.45 kg/hr for the sum of all batch process vents and each individual continuous process vent *AND* establish 24-hr avg. for min scrubber effluent pH, min scrubber liquid flow and max inlet gas flow determined from worst case compliant stack test [40 CFR 63.2465(a) and (c), Table 3 to Subpart FFFF of Part 63, 63.2450(e)(3), 63.994(c)(1), 63.998(a)(2) and (b), 63.997(e)(1)(iii)] or • 20 ppmv hydrogen halide and halogen HAP *AND* establish 24-hr avg. for min scrubber effluent pH, min scrubber liquid flow and max inlet gas flow determined from worst case compliant stack test [40 CFR 63.2465(a) and (c), Table 3 to Subpart FFFF of Part 63, 63.2450(e)(3), 63.994(c)(1), 63.998(a)(2) and (b), 63.997(e)(1)(iii)] •	or • 0.45 kg/hr hydrogen halides and halogens *AND* establish 24-hr avg. for min scrubber pH and liquid flow, determined from worst case compliant stack test [40 CFR 63.113(c)(1)(ii), 63.118(a)(2)]
BCM Solvent Tanks (D.9)	N/A	N/A	N/A	See the MON Alternative Operating Scenarios portion of this table.	N/A	• **<u>Tanks >38 m3 to<75 m3, >13.1kPa:</u> 90% DRE for total HAP (VOHAP + HX) and min temp via worst case stack test *AND* establish min recirculation flow rate, min scrubber pH [40 CFR 63.1253(b)(1), 63.1257(c), 63.1258(b)(1)(ii)]** or • **<u>Tanks >75 m3, >13.1kPa:</u> 95% DRE and min temp via worst case stack test *AND* establish min recirculation flow rate, min scrubber pH, and max**	• Reduce HX emissions by at least 98% *AND* establish 24-hr avg for min scrubber liquid flow rate or pressure drop and min pH of effluent scrubber liquid from worst case compliant stack test or • Alternative Standard: Hydrogen halid and halogen emissions shall be controlled by a caustic scrubbing system to achieve no more than 20 parts per million (ppmv) based on a 24-hourdaily average • The following maximum flowrate may be used to demonstrate the residence time is > 0.75 sec: o Max Flowrate, cfm = volume of retention chamber, scf / residence time, sec o Max Flowrate, cfm = 2504.7 scf / 0.75 sec o Max Flowrate, cfm = 3340 scf/sec		Meet requirements above for process vents [40 CFR 63.2450(c)(2)]	N/A

Affected Units Controlled by RTO	Applicable Rules								Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	OSWRO MACT (40 CFR 63 Subpart DD)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)	Pharma MACT (40 CFR Part 63 Subpart GGG)	PSD BACT Standards (326 IAC 2-2-3)	Streamlined Requirements	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)
						caustic flow rate [40 CFR 63.1253(c)(1)(i) and 63.1258(b)(1)(ii)] or • Alternative Standard: 20 ppmv HX, measured as HCl via CEMS avg. over 24-hr block period *AND* min residence time of ≥ 0.75 sec (or flowrate) and min temp of ≥ 816 C [63.1253(d), 63.1257(a)(5), 63.1258(b)(2), (b)(5)]				
BCM Waste Tanks (D.10)	N/A	N/A	N/A	Minimum residence time of 0.5 seconds at a minimum temperature of 760 °C [40 CFR 63.2485/MON Table 7, 63.139(c)(1)(iii)]	N/A	• 95% DRE achieved via stack testing AND establish min recirculation flow rate, min scrubber pH or • 20 ppmv HX avg. over 24-hr period (either via CEMS or performance test) [40 CFR 63.1252(g)(1), 63.1258(a), (b)]	• 95% DRE achieved via stack testing AND establish min recirculation flow rate, min scrubber pH or • Hydrogen halide and halogen emissions shall be controlled by a caustic scrubbing system to achieve no more 20 ppmv based on a 24-hourdaily average and • Minimum residence time of 0.5 seconds at a minimum temperature of 760 °C		N/A	N/A
BCM IDSs to Control Device (D.8)	N/A	N/A	N/A		N/A				N/A	N/A
Transfer Racks (D.20)	N/A	N/A	N/A	See the MON Alternative Operating Scenarios portion of this table.	See the HON Alternative Operating Scenarios portion of this table.	N/A	See MON and HON Alternative Operating Scenarios portion of this table.		Meet requirements above for process vents [40 CFR 63.2450(c)(2)]	N/A
CO/NOx/SO2 Point Source Emission Limits and Standards										
BCM and BCM Support Process Vents (D.6 and D.7)	N/A	N/A	N/A	N/A	N/A	N/A	Each RTO system shall be limited to the following averages over a 24-hr period: • 73 ppmv CO • 91 ppmv NOx • 100 ppmv SO2	N/A	N/A	N/A
BCM Solvent Tanks (D.9)	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A
BCM Waste Tanks (D.10)	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A
BCM IDS to Control Device (D.8)	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A
Transfer Racks (D.20)	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A
Work Practice Standards – Closed-Vent Systems (CVSs)										
BCM and BCM Support Process Vents (D.6 and D.7)	N/A	N/A	For CVSs not under negative pressure: • Initial Method 21 inspections and annual visual inspections for CSV defects; Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping; loose connections; or broken or missing caps or other closure devices [40 CFR 63.685(g)(1)(iv), 63.962(a)(3)(ii), 63.690(b), 63.693(c)(1)(i) and 63.695(c)(1)(i)]; • Repair defects within	For CVSs not under negative pressure: • Initial Method 21 inspections and annual visual inspections for visible, audible or olfactory indications of leaks on closed vent systems that are hard-piped [40 CFR 63.983(b)(1)(i), (c)(1)] • Repair leaks/failures within 5/15 days, unless delay of repair allowed [40 CFR 63.983(d)] • Inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of	See the HON Alternative Operating Scenarios portion of this table.	None Specified	Closed-vent systems NOT operated under negative pressure: • Initial Method 21 inspections on closed vent systems • Annual visual inspections for defects on closed vent systems • Repair detected defects within 5/15 days, except where delay of repair is allowed • Any time a component is repaired or replaced, conduct a Method 21 inspection to demonstrate < 500 ppmv Closed-vent systems operated under negative pressure: • Annual visual inspections for defects such as visible cracks/holes/gaps in ductwork/piping; loose connections; or broken/missing caps • Repair detected defects within 5/45 days, except where delay of repair allowed		N/A	None specified
BCM Solvent Tanks (D.9)	N/A	N/A				None Specified			N/A	For CVS not under negative pressure: • Initial Method 21 inspections and annual inspections for visible, audible or olfactory indications of leaks on CVS [40 CFR 63.148(b)(1), (b)(3)] • Initial and annual inspection must be completed during filling of the storage vessels [40 CFR 63.120(d)(6)] • Repair leaks monitored under Methods 21 (500 ppm) or by

Affected Units Controlled by RTO	Applicable Rules							Streamlined Requirements	Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**PSD BACT Standards (326 IAC 2-2-3)**		**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**
			5/45 days unless delay of repair allowed [40 CFR 63.695(c)(3)] • Any time a component is repaired or replaced, conduct a Method 21 inspection to demonstrate < 500 ppmv [40 CFR 63.695(c)(1)(ii)(A)] • Inspections not required if unsafe to monitor; develop plan for inspection schedule of unsafe to inspect [40 CFR 63.695(f)]	unsafe/difficult to inspect [40 CFR 63.983(b)(2) and (3)] For CVSs operated under negative pressure: • No inspections required [40 CFR 63.2450(e)(1), 63.982(c), 63.983(a)] • For audible, visible or olfactory leaks, either eliminate leak or monitor under Method 21 (500 ppm) [40 CFR 63.983(d)(1)]; repair leaks within 5/15 days unless delay of repair [40 CFR 63.983(d)(2) and (3)]			• Not required to test or inspect if unsafe or difficult to monitor			visual inspection within 5/15 days, unless delay of repair allowed [40 CFR 63.148(e)] • Inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe/difficult to inspect [40 CFR 63.148(g), (h)] For CVSs under negative pressure: • No inspections required [40 CFR 63.120(d)(7), 63.128(e)(3), 63.133(b)(4), 63.134(b)(5), 63.136(b)(4)]
BCM Waste Tanks (D.10)	N/A	N/A	For CVSs under negative pressure: • Annual visual inspections for CSV defects; Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping; loose connections; or broken or missing caps or other closure devices [40 CFR 63.685(g)(1)(iv), 63.962(a)(3)(ii), 63.690(b), 63.693(c)(1)(i) and 63.695(c)(2)(i)] • Repair defects within 5/45 days unless delay of repair allowed [40 CFR 63.695(c)(3)] • Inspections not required if unsafe to monitor; develop plan for inspection schedule of unsafe to inspect [40 CFR 63.695(f)] NOTE: These requirements do not apply to solvent tanks. Solvent tanks are not regulated under the Offsite Waste MACT.	For CVS not under negative pressure [40 CFR Part 63 Subpart FFFF Table 7, 63.133(a)(2), (b)(3), 136(b)(3), (e)(2)(i)]: • Initial Method 21 inspections and annual inspections for visible, audible or olfactory indications of leaks on CVS and on each fixed roof, cover and enclosure [40 CFR 63.148(b)(1), (b)(3)] • Initial and annual inspection must be completed during filling of the storage vessels [40 CFR 63.120(d)(6)] • Repair leaks monitored under Methods 21 (500 ppm) or by visual inspection within 5/15 days, unless delay of repair allowed [40 CFR 63.148(e)] • Inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe/difficult to inspect [40 CFR 63.148(g), (h)] For CVSs under negative pressure: • No inspections required [40 CFR 63.120(d)(7), 63.128(e)(3), 63.133(b)(4), 63.134(b)(5), 63.136(b)(4)]	See the HON Alternative Operating Scenarios portion of this table.	For CVSs not under negative pressure: • Initial Method 21 inspections and annual visual inspections for visible, audible or olfactory indications of leaks on closed vent systems that are hard-piped [40 CFR 63.1256(b)(3)(iii), 63.1256(e)(1)(iii), 63.1258(h)(2)(i) and 63.1258(h)(10)] • Repair leaks/failures within 5/15 days, unless delay of repair allowed [40 CFR 63.1258(h)(4) and (5)] • Inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe/difficult to inspect [40 CFR 63.1258(h)(6) and (7)] For CVSs operated under negative pressure: • No inspections required [40 CFR 63.1256(b)(3)(iv) and 63.1256(e)(1)(iv)]	Same as requirements for BCM and BCM Support Process Vents and BCM Solvent Tanks above.		N/A	
BCM IDSs to Control Device (D.8)	N/A	N/A							N/A	
Transfer Racks (D.20)	N/A	N/A	N/A			N/A			N/A	
Work Practice Standards – Bypass Systems in Closed Vent System										
BCM and BCM Support Process Vents (D.6 and D.7)	N/A	N/A	None Specified	• Continuous flow indicator at inlet of bypass line and hourly records. [40 CFR 63.2450(e)(1), 63.982(c), 63.983(a)(3)(i) and (b)(4)(i), 93.998(d)(1)(ii)(A)] or • Monthly visual inspection of seal or locking device on the mechanism by which the	• Continuous flow indicator at inlet of bypass line and hourly records. [40 CFR 63.114(d)(1), 118(a)(3), 148(f)(1), (f)(3)] or • Monthly visual inspection of seal or locking device on the	• Continuous flow indicator at least once every 15 minutes. [40 CFR 63.1252(b)(1), 63.1253(b) and (c), Table 4, 63.1258(b)(1)(xi)] or • Monthly visual inspection of seal or locking device on	• Continuous flow indicator at inlet of bypass line at least once every 15 minutes. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, rupture disks and pressure relief valves needed for safety purposes are not subject to this requirement or • Monthly visual inspection of seal or locking device on the mechanism by which the bypass device position is controlled to ensure the device is in the		N/A	N/A
BCM Solvent Tanks (D.9)	N/A	N/A	N/A						N/A	N/A
BCM Waste Tanks (D.10)	N/A	N/A	• Continuous flow indicator at inlet of bypass [40 CFR						N/A	N/A
BCM IDSs to	N/A	N/A							N/A	N/A

Affected Units Controlled by RTO	Applicable Rules								Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	OSWRO MACT (40 CFR 63 Subpart DD)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)	Pharma MACT (40 CFR Part 63 Subpart GGG)	PSD BACT Standards (326 IAC 2-2-3)	Streamlined Requirements	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)
Control Device (D.8)			63.693(c)(2)(i)] or • Monthly visual inspection of seal or locking device on the mechanism by which the bypass device position is controlled to ensure the device is in the closed position and that the seal is not broken [40 CFR 63.693(c)(2)(ii)] [40 CFR 63.685(g)(1)(iv), 63.962(a)(3)(ii)]	bypass device position is controlled to ensure the device is in the closed position and that the seal is not broken. [40 CFR 63.2450(e)(1), 63.982(c), 63.983(a)(3)(ii) and (b)(4)(ii), 93.998(d)(1)(ii)(B)]	mechanism by which the bypass device position is controlled to ensure the device is in the closed position and that the seal is not broken. [40 CFR 63.114(d)(2), 63.118(a)(4), 148(f)(2), (f)(3)]	the mechanism by which the bypass device position is controlled to ensure the device is in the closed position and that the seal is not broken [40 CFR 63.1252(b)(2), 63.1253(b) and (c), Table 4, 63.1258(b)(1)(xi)]	closed position and that the seal is not broken.			
Transfer Racks (D.20)	N/A	N/A							N/A	N/A
Exceptions to Control Device (RTO System) and Closed-Vent System Standards										
BCM and BCM Support Process Vents (D.6 and D.7)	N/A	N/A	N/A	• Equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines are not subject to Bypass System work practices. [40 CFR 63.2450(e)(1), 63.982(c), 63.983(a)(3)(i) and (b)(4)(i) & (ii), 93.998(d)(1)(ii)(A) & (B)] • Opening of a safety device, as defined in 63.2550, is allowed at any time to avoid an unsafe conditions [40 CFR 63.2450(p)] • Control except for SSM events [63.2450(a)]	Equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines are not subject to Bypass System work practices. [40 CFR 63.114(d)(1) & (2), 63.118(a)(3) & (4), 148(f)(1) & (2), (f)(3)]	• Equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines are not subject to Bypass System work practices. [40 CFR 63.1252(b)(1) and (2), 63.1253(b) and (c), Table 4, 63.1258(b)(1)(xi)] • Opening of a safety device, as defined in 63.1251, is allowed at any time to avoid an unsafe conditions [40 CFR 63.1252(a)]	• Equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines are not subject to Bypass System work practices. • Opening of a safety device is allowed at any time to avoid an unsafe conditions] • Control except for SSM events (with exception of processes subject to MACT rules that do not have SSM provisions)		N/A	N/A
BCM Solvent Tanks (D.9)	N/A	N/A	N/A						N/A	N/A
BCM Waste Tanks (D.10)	N/A	N/A	• Opening of a safety device, as defined in 63.681 is allowed at any time conditions require it to do so to avoid an unsafe conditions [40 CFR 63.685(g)(2)(ii) and 63.681] • The control device may be bypassed for purposes of correcting a malfunction of the closed vent system or control device [40 CFR 63.693(b)(3)(ii)]						N/A	N/A
BCM IDSs (D.8)	N/A	N/A							N/A	N/A
Transfer Racks (D.20)	N/A	N/A	N/A			N/A			N/A	N/A
Compliance Demonstration Methods										
TOC Continuous emissions monitoring (CEMS) and Continuous monitoring system (CMS) requirements (if complying with 20 ppmv TOC alternative standard)										
BCM and BCM Support Process Vents (D.6 and D.7)	CEMS Monitoring Requirements [326 IAC 3-5-1(c)(1) and (d)]: • Install/monitor VOC CEMS that meets PS 8 set forth in 40 CFR 60, Appx B [326 IAC 3-5-2(1)] • Measure/record VOC for each successive 15 minute measuring period [326 IAC 3-5-2(2)(B) • Daily CD check [326 IAC 3-5-5(a) and 40 CFR 60, Appx F, Proc 1] • Quarterly cylinder gas audits [326 IAC 3-5-	N/A	• Meet requirements of PC 8 or 9 of Appx B of CFR 60 [40 CFR 63.693(f)(3)(iii) or (iv)] • O&M for CMSs [63.8(c)(1)]	Comply 40 CFR 63.1258(b)(5), using the operating day as the averaging period for CEMS data [40 CFR 63.2505(b)]	N/A	CEMS for Alternative Standard [40 CFR 63.1253(d) and 63.1254(c)]: • *Initial compliance demonstration detailed in the Relative Accuracy Test Audit (RATA) Compliance Reports submitted to IDEM on October 17, 2002 for RTO1 and August 28, 2002 for RTO2* [40 CFR 63.1254(a), 63.1257(a)(5), (b), and (d)(1)(iv)] • Meet requirements of Performance Spec (PC) 8 of Appx B of 40 CFR 60 [40 CFR 63.1258(b)(1)(x), 63.1258(b)(5)(i)(A), 63.8(c)(2)] • Monitor/record outlet TOC concentration every 15 min	CEMS for Alternative Standard [40 CFR 63.1253(d) and 63.1254(c), 40 CFR 63.2505(b)]: • *Initial compliance demonstration detailed in the Relative Accuracy Test Audit (RATA) Compliance Reports submitted to IDEM on October 17, 2002 for RTO1 and August 28, 2002 for RTO2* [40 CFR 63.1254(a), 63.1257(a)(5), (b), and (d)(1)(iv)] • Meet requirements of Performance Spec (PC) 8 of Appx B of 40 CFR 60 [40 CFR 63.1258(b)(1)(x), 63.1258(b)(5)(i)(A), 63.8(c)(2)] • Monitor/record outlet TOC concentration every 15 min during periods which device is operating on waste [40 CFR 63.1258(b)(1)(x), (b)(5)(i) and 63.8(c)(4)(ii)] • Daily calibration drift check [40 CFR 63.1258(b)(1)(x), 40 CFR 60, Appx F, Procedure 1, and 63.8(c)(6)] • Quarterly cylinder gas audits and annual RATA [40 CFR 63.1258(b)(1)(x), (b)(5)(i)(A) and 40 CFR 60, Appx F, Procedure 1]		N/A	N/A
BCM Solvent Tanks (D.9)		N/A	N/A	Comply 40 CFR 63.1258(b)(5), using the operating day as the averaging period for CEMS data [40 CFR 63.2505(b)]	N/A				N/A	N/A

Affected Units Controlled by RTO	Applicable Rules							Streamlined Requirements	Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	OSWRO MACT (40 CFR 63 Subpart DD)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)	Pharma MACT (40 CFR Part 63 Subpart GGG)	PSD BACT Standards (326 IAC 2-2-3)		MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)
	5(e), 40 CFR 60, Appx F, Proc 1] • Annual RATA [326 IAC 3-5-5(e) and 40 CFR 60, Appx F, Proc 1]					during periods which device is operating on waste [40 CFR 63.1258(b)(1)(x), (b)(5)(i) and 63.8(c)(4)(ii)] • Daily calibration drift check [40 CFR 63.1258(b)(1)(x), 40 CFR 60, Appx F, Procedure 1, and 63.8(c)(6)] • Quarterly cylinder gas audits and annual RATA [40 CFR 63.1258(b)(1)(x), (b)(5)(i)(A) and 40 CFR 60, Appx F, Procedure 1] • Do not include data dyrung periods of no flow [40 CFR 63.1258(b)(2)(iii)] • O&M and QC for CMSs [40 CFR 63.1258(b)(1)(x), (b)(5)(i)(A), and 63.8(c)(1) and (d)]	• Do not include data dyrung periods of no flow [40 CFR 63.1258(b)(2)(iii)] • O&M and QC for CMSs [40 CFR 63.1258(b)(1)(x), (b)(5)(i)(A), and 63.8(c)(1) and (d)]			
BCM Waste Tanks (D.10)		N/A	• Meet requirements of PC 8 or 9 of Appx B of CFR 60 [40 CFR 63.693(f)(3)(iii) or (iv)] • O&M for CMSs [63.8(c)(1)]		N/A	N/A			N/A	N/A
BCM IDSs to control device (D.8)		N/A			N/A	N/A			N/A	N/A
Transfer Racks (D.20)	N/A	N/A	N/A		N/A	N/A			N/A	N/A
HX Continuous CEMS requirements (if complying with 20 ppmv HX alternative standard)										
BCM and BCM Support Process Vents (D.6 and D.7)	N/A	N/A	N/A	See the MON Alternative Operating Scenarios portion of this table.	N/A	The following CEMS requirements apply when demonstrating compliance with the 20 ppmv HCl alternative standard [63.1253(d) and 63.1254(c)]: Initial Compliance Procedures – *Initial compliance demonstration detailed in the Relative Accuracy Test Audit (RATA) Compliance Reports submitted to IDEM on October 17, 2002 for RTO1 and August 28, 2002 for RTO2* [63.1253(a), 63.1254(a), 63.1257(b), 63.1257(c)(4), 63.1257(d)(1)(iv) and 63.1257(a)(5)] HCl CEMS Monitoring Requirements – • Meet PS 15 of Appx B of part 60; or any other CEMS capable of measuring HCl for which a PS has been promulgated in appx B of part 60; or CEMS for which a PS has not been promulgated, if Permittee	The following Pharma MACT compliance determination requirements for process vents and solvent tanks shall satisfy the PSD BACT requirements for fluorides and serve as the streamlined requirement when demonstrating compliance with the 20 ppmv concentration standard: Initial Compliance Procedures – *Initial compliance demonstration detailed in the Relative Accuracy Test Audit (RATA) Compliance Reports submitted to IDEM on October 17, 2002 for RTO1 and August 28, 2002 for RTO2* [63.1253(a), 63.1254(a), 63.1257(b), 63.1257(c)(4), 63.1257(d)(1)(iv) and 63.1257(a)(5)] HCl CEMS Monitoring Requirements – • Meet PS 15 of Appx B of part 60; or any other CEMS capable of measuring HCl for which a PS has been promulgated in appx B of part 60; or CEMS for which a PS has not been promulgated, if Permittee prepares/submits a monitoring plan to the agency for approval [63.1258(b)(5)(i)(A) and (B) and 63.8(b)(ii)] • Monitor and record outlet TOC and HX concentration every 15 min during periods which device is operating [63.1258(b)(5)(i) and 63.8(c)(4)(ii)]Quarterly cylinder gas audits [63.1258(b)(5)(i)(A)] • Annual RATA • Monitoring values taken during periods in which the control devices are not functioning in controlling emissions shall not be considered in emissions averaging. Tippecanoe Labs will determine these		Comply with 63.1258(b)(5), using the operating day as the averaging period for CEMS data and monitoring for total hydrogen halide and halogen HAP [40 CFR 63.2505(b)]	N/A
BCM Solvent Tanks (D.9)	N/A	N/A	N/A	See the MON Alternative Operating Scenarios portion of this table.	N/A					N/A

Affected Units Controlled by RTO	Applicable Rules							Streamlined Requirements	Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	OSWRO MACT (40 CFR 63 Subpart DD)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)	Pharma MACT (40 CFR Part 63 Subpart GGG)	PSD BACT Standards (326 IAC 2-2-3)		MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)
						prepares/submits a monitoring plan to the agency for approval [63.1258(b)(5)(i)(A) and (B) and 63.8(b)(ii)] • Monitor and record outlet TOC and HX concentration every 15 min during periods which device is operating [63.1258(b)(5)(i) and 63.8(c)(4)(ii)]Quarterly cylinder gas audits [63.1258(b)(5)(i)(A)] • Annual RATA • Monitoring values taken during periods in which the control devices are not functioning in controlling emissions shall not be considered in emissions averaging. Tippecanoe Labs will determine these periods by control device operating status [63.1258(b)(2)(iii)] • O&M and QC for CMSs [63.1258(b)(1)(x), (b)(5)(i)(A), and 63.8(c)(1) and (d)]	periods by control device operating status [63.1258(b)(2)(iii)] • O&M and QC for CMSs [63.1258(b)(1)(x), (b)(5)(i)(A), and 63.8(c)(1) and (d)]			
BCM Waste Tanks (D.10)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BCM IDSs to control device (D.8)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Transfer Racks (D.20)	N/A	N/A	N/A	See the MON Alternative Operating Scenarios portion of this table.	N/A	N/A	N/A	N/A	Meet requirements above for process vents [40 CFR 63.2450(c)(2)]	N/A
CO/NOx/SO2 CEMS requirements										
BCM and BCM Support Process Vents (D.6 and D.7)	CEMS Monitoring Requirements [326 IAC 3-5-1(d)]: • Install/monitor CEMS that meets PS 4 or 4A for CO and PS 2 for NOx and SO2 set forth in 40 CFR Part 60 Appx B [326 IAC 3-5-2(1)] • Measure/record for each successive 15 minute measuring period [326 IAC 3-5-2(2)(B) • Daily CD check [326 IAC 3-5-5(a) and 40 CFR 60, Appx F, Proc 1] • Quarterly cylinder gas audits and annual RATA [326 IAC 3-5-	N/A	N/A	N/A	N/A	N/A	The following CEMS determination requirements of 326 IAC 3-5 shall satisfy the PSD BACT for CO/NOx/SO2 and serve as the streamlined requirement. Monitoring data is only required when burning fume streams: • Install/monitor CEMS that meets PS 4 or 4A for CO and PS 2 for NOx and SO2 set forth in 40 CFR Part 60 Appx B [326 IAC 3-5-2(1)] • Measure/record for each successive 15 minute measuring period [326 IAC 3-5-2(2)(B) • Daily CD check [326 IAC 3-5-5(a) and 40 CFR 60, Appx F, Proc 1] • Quarterly cylinder gas audits and annual RATA [326 IAC 3-5-5(e), 40 CFR 60, Appx F, Proc 1] • Initial monitor system certifications within 180 days upon startup (permit issuance date) [326 IAC 3-5-3(1)(A)] • Monitor system certifications of monitor replacement or significant monitor repair within 45 days following the change [326 IAC 3-5-3(1)(B)]		N/A	N/A
BCM Solvent Tanks (D.9)				N/A	N/A	N/A			N/A	N/A
BCM Waste Tanks (D.10)				N/A	N/A	N/A			N/A	N/A
BCM IDSs to control device (D.8)				N/A	N/A	N/A			N/A	N/A

Affected Units Controlled by RTO	Applicable Rules							Streamlined Requirements	Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**PSD BACT Standards (326 IAC 2-2-3)**		**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**
	5(e), 40 CFR 60, Appx F, Proc 1] • Initial monitor system certifications within 180 days upon startup (permit issuance date) [326 IAC 3-5-3(1)(A)] • Monitor system certifications of monitor replacement or significant monitor repair within 45 days following the change [326 IAC 3-5-3(1)(B)]									
Transfer Racks (D.20)	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A
TOC Stack Testing requirements (if complying with DRE standard)										
BCM and BCM Support Process Vents (D.6 and D.7)	When demonstrating compliance with the DRE standard, facilities subject to NSPS or NESHAP shall be tested under conditions specified in that applicable provision [326 IAC 3-6-3]	N/A	• The methods specified in 40 CFR 63.693(f)(2)(i), 63.694(l)(1)(i), 63.694(l)(3) shall be used if demonstrating compliance with the DRE standard • The methods specified in 40 CFR 63.693(f)(2)(i), 63.694(l)(1)(ii), 63.694(l)(4) shall be used if demonstrating compliance with the concentration standard via stack test	The following stack testing requirements apply when demonstrating compliance with the DRE standard: • Submit site-specific plan prior to testing as required by 40 CFR 63.7 and 63.999(a)(1)(i) • Conduct test under worst-case conditions or hypothetical worst-case conditions via max load to control device in accordance with 40 CFR 63.1257(b)(8) • Perform testing on inlet and outlet of control device [40 CFR 63.2460(c)(2)(ii), 63.2450(e)(1), 63.982(c)(2), 63.988(b)(1), 63.997(a), (d), (e)(1)(v), (e)(2)] • Measure and continuously record temperature during stack test to develop operating parameter limit [40 CFR 63.2450(e)(1), 63.982(c)(2), 63.988(c)(2), 998(a)(2)(ii)(B)	See the HON Alternative Operating Scenarios portion of this table.	• Submit site-specific plan prior to testing as required by 63.7 and 63.1260(l) • Conduct test under worst-case conditions or hypothetical worst-case conditions via max load to control device • Measure gas stream volumetric flow rates at least every 15 minutes • Perform testing on inlet and outlet of control device [63.1257(c)(1)(iii), 63.1257(d)(1)(ii)(A), 63.1257(d)(3)(ii), 63.1257(b)(8)] • Measure and record incinerator temperature during stack test to develop operating parameter limits	The following stack testing requirements for TOC under the Pharma MACT satisfy the PSD BACT for VOC and streamlined requirements when demonstrating compliance with the DRE standard: • Submit site-specific plan prior to testing as required by 40 CFR 63.7 and 63.1260(l) • Conduct test under worst-case conditions or hypothetical worst-case conditions via max load to control device • Measure gas stream volumetric flow rates at least every 15 minutes • Perform testing on inlet and outlet of control device [40 CFR 63.1257(c)(1)(iii), 63.1257(d)(1)(ii)(A), 63.1257(d)(3)(ii), 63.1257(b)(8)] • Measure and record incinerator temperature during stack test to develop operating parameter limits		N/A	The following stack testing requirements apply when demonstrating compliance with the DRE standard: • Submit site-specific plan prior to testing as required by 40 CFR 63.7 and 63.103(b)(2) • Conduct test at maximum or minimum representative operating conditions, whichever results in lower emissions reduction 40 CFR 63.103(b)(3) • Perform testing on inlet and outlet of control device [40 CFR 63.116(c), 103(b)] • Measure and continuously record the following temperature during stack test to develop operating parameter limits [40 CFR 63.114(e), 117(f)])
BCM Solvent Tanks (D.9)		N/A	N/A		See the HON Alternative Operating Scenarios portion of this table.				N/A	**Meet combined stream for either:** • **Group 1 continuous process vents** • **Group 1 transfer racks** **[40 CFR 63.112(e)(3)(ii)]**
BCM Waste Tanks (D.10)		N/A	Meet requirements above for process vents						N/A	**Meet combined stream for either:** • **Group 1 continuous process vents** • **Group 1 transfer racks** • **Group 1 storage vessels** **[40 CFR 63.112(e)(3)(ii)]**
BCM IDSs to control device (D.8)	N/A	N/A							N/A	
Transfer Racks (D.20)	N/A	N/A	N/A			N/A			N/A	**Meet requirements for Group 1 continuous process vents for the combined stream [40 CFR 63.112(e)(3)(ii), 63.128(a)(1)]**
HX Stack Testing requirements (if complying with DRE standard)										
BCM and BCM Support Process Vents (D.6	When demonstrating compliance with the DRE standard, facilities subject to	N/A	N/A	See the MON Alternative Operating Scenarios portion of this table.	See the HON Alternative Operating Scenarios portion of this table.	• Submit site-specific plan prior to testing as required by 40 CFR 63.7 and 63.1260(l)	The following stack testing requirements for hydrogen halides and halogens under the Pharma MACT shall satisfy the fluorides compliance determination requirements and serve as the		• Submit site-specific plan prior to testing as required by 40 CFR 63.7 and 63.999(a)(1)(i)	• Submit site-specific plan prior to testing as required by 40 CFR 63.7 and 63.103(b)(2) • Conduct test at maximum or

Affected Units Controlled by RTO	Applicable Rules							Streamlined Requirements	Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	OSWRO MACT (40 CFR 63 Subpart DD)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)	Pharma MACT (40 CFR Part 63 Subpart GGG)	PSD BACT Standards (326 IAC 2-2-3)		MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)
and D.7)	NSPS or NESHAP shall be tested under conditions specified in that applicable provision [326 IAC 3-6-3]					• Conduct test under worst-case conditions or hypothetical worst-case conditions via max load to control device • Measure gas stream volumetric flow rates at least every 15 minutes • Perform testing on inlet and outlet of control device [40 CFR 63.1257(c)(1)(iii), 63.1257(d)(1)(ii)(A), 63.1257(d)(3)(ii), 63.1257(b)(8)] • Measure and record scrubber pH, recirculation flow rate and caustic flow rate during stack test to develop operating parameter limits	streamlined requirement when demonstrating compliance with the DRE standard: • Submit site-specific plan prior to testing as required by 63.7 and 63.1260(l) • Conduct test under worst-case conditions or hypothetical worst-case conditions via max load to control device • Measure gas stream volumetric flow rates at least every 15 minutes • Perform testing on inlet and outlet of control device [63.1257(c)(1)(iii), 63.1257(d)(1)(ii)(A), 63.1257(d)(3)(ii), 63.1257(b)(8)] • Measure and record scrubber pH • Measure recirculation flow rate • Measure caustic flow rate		• Conduct test under worst-case conditions or hypothetical worst-case conditions via max load to control device [40 CFR 63.1257(b)(8) and 63.997(e)(1)(iii)] • Perform testing on inlet and outlet of control device [40 CFR 63.2460(c)(2)(ii), 63.2450(e)(3), 63.994, 63.988(b)(1), 63.997(a), (d), (e)(1)(v), (e)(3)] • Measure and continuously record scrubber pH, liquid flow and gas stream flow during stack test to develop operating parameter limits [40 CFR 63.2450(e)(3), 63.994, 998(a)(2)(ii)(D), (a)(4)	minimum representative operating conditions, whichever results in lower emissions reduction 40 CFR 63.103(b)(3) • Perform testing on inlet and outlet of control device [63.116(d), 103(b)] • Measure and continuously record scrubber pH, liquid flow and gas stream flow during stack test to develop operating parameter limits [40 CFR 63.114(a)(4), (e), 117(f)]
BCM Solvent Tanks (D.9)		N/A	N/A		N/A					N/A
BCM Waste Tanks (D.10)		N/A	N/A		N/A					N/A
BCM IDSs to control device (D.8)		N/A	N/A		N/A					N/A
Transfer Racks (D.20)	N/A	N/A	N/A	See the MON Alternative Operating Scenarios portion of this table.	See the HON Alternative Operating Scenarios portion of this table.	N/A	N/A			**Meet requirements for Group 1 continuous process vents for the combined stream [40 CFR 63.112(e)(3)(ii), 63.128(a)(1)]**
RTO Parametric Continuous Monitoring System (CMS) and other monitoring requirements										
BCM and BCM Support Process Vents (D.6 and D.7)	Air Flow Monitor Requirements: • Measure/record each successive 15-minute measuring period [326 IAC 3-5-2(2)(B)] • Annual RATA [326 IAC 3-5-5(e) and 40 CFR 60, Appx F, Proc 1] • Initial monitor system certifications within 180 days upon startup (permit issuance date) [326 IAC 3-5-3(1)(A)] • Monitor system certifications of monitor replacement or significant monitor repair within 45 days following the change [326 IAC 3-5-3(1)(B)] • QC requirements [326 IAC 3-5-5(d)]	N/A	Temperature CMS requirements, if complying with the TOC DRE standard: • Measure and record a data point at least once every 15 minutes when burning fume streams [40 CFR 63.693(b)(4), (f)(3)(i)] • O&M for CMSs [40 CFR 63.8(c)(1)] NOTE: These requirements do not apply to solvent tanks. Solvent tanks are not regulated under the Offsite Waste MACT	• Temperature CMS requirements if complying with 20 ppmv TOC alternative standard [63.1258(b)(1)(vii)]: o Measure and record a data point at least once every 15 minutes when burning fume streams o Temperature monitoring device must be accurate to within ±1% of C temp or ±1.2C, whichever is greater [40 CFR 63.981] o Calibrate according to manufacturer's specifications or other written procedures o O&M and quality control for CMSs [40 CFR 63.2505(b), 63.1258(b)(5)(i), (ii)(A), 63.2450(k), 63.981, 63.996(c)] • No performance specifications referenced for residence time (or flowrate) CMS requirements for 20 ppmv TOC alternative std [40 CFR 63.2505(b),	• Temperature CMS requirements [40 CFR 63.112(e)(3)(ii), 63.114(a)(1), 63.127(a)(1), 63.143(g)]: o Measure and record a data point at least once every 15 minutes when burning fume streams o Temperature monitoring device must be accurate to within ±1% of C temp or ±0.5C, whichever is greater [40 CFR 63.111] o Calibrate according to manufacturer's specifications or other written procedures o O&M and quality control for CMSs [40 CFR 63.8(c)(1)] • No performance specifications referenced for residence time (or flowrate) CMS requirements for 20 ppmv TOC alternative std [40 CFR 63.2505(b),	• Temperature CMS requirements, if complying with the DRE standard or the 20 ppmv TOC alternative standard [63.1258(b)(1)(vii)]: o Measure and record a data point at least once every 15 minutes when burning fume streams o Monitor device must be accurate to within ±0.75% of C temp or ±2.5C, whichever is greater o Calibrate annually o O&M and quality control for CMSs [40 CFR 63.1258(b)(1)(x), (b)(5)(i)(A), and 63.8(c)(1), (d)] • No performance specifications referenced for residence time (or flowrate) CMS requirements for 20 ppmv TOC alternative std [40 CFR 63.1258(a) and (b)(5)(i)(A), and 63.1260(e)]	Temperature CMS requirements: • Measure and record a data point at least once every 15 minutes when burning fume streams • Monitor device must be accurate to within ±0.75% of C temp or ±0.5C, whichever is greater • Calibrate annually • O&M and quality control for CMSs The flow monitor CMS requirements under 326 IAC 3-5 shall serve as the streamlined requirement to demonstrate compliance with residence time: • Measure/record each successive 15-minute measuring period [326 IAC 3-5-2(2)(B)] • Annual RATA [3-5-5(e) and 40 CFR 60, Appx F, Proc 1] • Initial monitor system certifications within 180 days upon startup (permit issuance date) [3-5-3(1)(A)] • Monitor system certifications of monitor replacement or significant monitor repair within 45 days following the change [3-5-3(1)(B)] • QC requirements [3-5-5(d)]		N/A	N/A
BCM Solvent Tanks (D.9)		N/A							N/A	N/A
BCM Waste Tanks (D.10)		N/A							N/A	N/A
BCM IDSs to control device (D.8)		N/A							N/A	N/A
Transfer	N/A	N/A	N/A			N/A			N/A	N/A

Affected Units Controlled by RTO	Applicable Rules							Streamlined Requirements	Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**PSD BACT Standards (326 IAC 2-2-3)**		**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**
Racks (D.20)				63.1258(b)(5)(i), (ii)(A)]	63.1258(b)(5)(i), (ii)(A)]					
Scrubber Parametric CMS and other monitoring requirements										
BCM and BCM Support Process Vents (D.6 and D.7)	N/A	N/A	N/A	See the MON Alternative Operating Scenarios portion of this table.	See the HON Alternative Operating Scenarios portion of this table.	• Scrubber liquid flow rate CMS requirements [40 CFR 63.1258(b)(1)(ii)]: o Measure & record a data point at least once/15 minutes when process is in operation o Monitor must be certified by the mfr to be accurate within ±10% of design scrubber liquid flowrate o Calibrate annually o O&M and QC for CMSs [40 CFR 63.1258(b)(1)(x), (b)(5)(i)(A), and 63.8(c)(1) and (d)] • Measure effluent scrubber liquid pH once per day [40 CFR 63.1257(b)(8), 63.1258(b)(1)(ii) and 63.1260(e)]: • Measure caustic flow rate in accordance with 40 CFR 63.8(c)(1) and (d) to demonstrate compliance with control device maximum as outlined in the NOC	When applying the control efficiency standard, the following streamlined compliance demonstration requirements shall satisfy the hydrogen halides/halogens requirements under Pharma MACT and the PSD BACT requirements for fluorides: • Scrubber liquid flow rate and scrubber effluent pH CMS requirements in accordance with 63.8(c)(1) and (d) and as outlined in the NOC: o Measure and record a data point at least once/15 minutes when process is in operation o Monitor must be certified by the mfr to be accurate within ±10% of design scrubber liquid flowrate o Calibrate annually o O&M and QC for CMSs		• For scrubber liquid flow rate, scrubber effluent pH and inlet gas flow CMS requirements: o Measure and record a data point at least once/15 minutes when process is in operation o Calibrate according to manufacturer's specifications or other written procedures o O&M and QC for CMSs [40 CFR 63.8(c)(1)] • Determine gas stream flow using one of the options in 40 CFR 63.994(c)(1)(ii) [40 CFR 63.2465(c), 63.994(c)(1), 63.998(a)(2)(ii)(D)(3) and (b)]	• Scrubber pH, liquid flow and gas flow rate CMS requirements [40 CFR 63.114(a), 63.127(a)]: o Measure and record a data point at least once/15 minutes when process is in operation o Monitor accuracy not specified o Calibrate according to manufacturer's specifications or other written procedures o O&M and QC for CMSs [40 CFR 63.8(c)(1)] • Measure effluent scrubber liquid pH once per day [40 CFR 63.114(a) and Table 3, 63.127(a) and Table 7]: • Determine Gas stream flow using one of the options in 40 CFR 63.114(a), 63.127(a)
BCM Solvent Tanks (D.9)	N/A	N/A	N/A							
BCM Waste Tanks (D.10)	N/A	N/A	N/A							
BCM IDSs to control device (D.8)	N/A	N/A	N/A	See the MON Alternative Operating Scenarios portion of this table.						
Transfer Racks (D.20)	N/A	N/A	N/A			N/A	N/A			
Record Keeping and Reporting Requirements										
Record Keeping Requirements										
BCM and BCM Support Process Vents (D.6 and D.7)	• CEMS, including flow monitor [326 IAC 3-5-6]: o raw data; o design/installation/ testing o corrective action or compliance plan, if applicable o maintenance logs o calibration checks and other QA activities o corrective and preventive action o facility downtime periods and reason for each downtime • Keep records of all test protocols, raw testing and support data, emission test	N/A	NOTE: The solvent storage tanks not subject to these conditions. • CMS (includes CEMS) and Control Device Records [40 CFR 63.693(b)(7), 63.696, 63.6, 63.10]: o Occurrence/duration records of each malfunction o Duration of each period during a malfunction when fumes continue to vent to the control device o Actions taken during periods of malfunction to restore control device to normal operation o All maintenance performed on control device equipment	• CMS (includes CEMS) and Control Device (RTO) Records [40 CFR 63.2450(k)(1), 63.998, 63.6, 63.10]: o Occurrence/duration records of each malfunction of RTO and CMS o CMS calibration checks and maintenance records o Malfunctioning/inoperative CMS periods o All required CMS measurements to demonstrate compliance with a standard o Current and superseded versions of SSM Plan stored at plantsite o Occurrence and duration of each SSM with excess	• Required Record keeping [40 CFR 63.152]: o Record each measured parameter data values or block average values for 15-minute or shorter periods and block hourly average values o Daily average values of each continuously monitored parameter calculated each operating day o Time and duration of monitoring system breakdowns, repairs, calibration checks, and zero and high-level adjustments; start-ups; shutdowns;	• CMS (includes CEMS) and Control Device (RTO) Records [40 CFR 63.1259, 63.10: o Malfunction occurrence/duration records o RTO operating parameter data o Description of worst-case operating conditions, (for DRE standard) o RTO system maintenance records o CMS data, calibration checks and maintenance records o Malfunctioning /inoperative CMS periods • Results of control device	NOTE: Although MACT recordkeeping requirements do not apply to NOx/SOx/CO CEMS and flow monitor, the Permittee shall comply with these more stringent record keeping requirements to satisfy 326 IAC 2-7-5(3). • Maintain record of operating plan that describes parameters monitored to demonstrate compliance with control device standards [40 CFR 60.115(b)(c)(1)] • SOP for all CEMS shall follow the requirements of 326 IAC 3-5-4(a) because more restrictive than 63.8(d) • CMS (includes CEMS) and Control Device (RTO) Records: o Occurrence/duration records of each malfunction of RTO and CMS o CMS calibration checks and maintenance records o Malfunctioning/inoperative CMS periods o All required CMS measurements to demonstrate compliance with a standard		N/A	N/A
BCM Solvent Tanks (D.9)		• Maintain record of operating plan that describes parameters monitored to demonstrate compliance with control device standards [40 CFR 60.115b(c)(1)] • Records of all measured values/parameters monitored [40 CFR 60.115b(c)(2)]							N/A	N/A
BCM Waste Tanks (D.10)									N/A	N/A

Affected Units Controlled by RTO	Applicable Rules							Streamlined Requirements	Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	OSWRO MACT (40 CFR 63 Subpart DD)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)	Pharma MACT (40 CFR Part 63 Subpart GGG)	PSD BACT Standards (326 IAC 2-2-3)		MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)
BCM IDSs to control device (D.8)	results, and emission test reports for a minimum of 5 years. • Retain monitoring data and supporting info for 5 years [326 IAC 3-5-6(a)] • Maintain SOP for all CEMS [326 IAC 3-5-4(a)]	N/A	o Current and superseded versions of SSM Plan stored at plantsite o Each SSM occurrence/duration o Actions taken during SSM when different from SSM plan o Info to demonstrate conformance with SSM plan are consistent with procedures in the plan o Malfunctioning/inoperative CMS periods o All required CMS measurements to demonstrate compliance with a standard • Results of control device performance tests & CMS performance evaluations [40 CFR 63.7(g)(3), 63.10(b)(2)(viii)] • Closed Vent System Records [40 CFR 63.693(b), 63.695(c), 63.10: o Closed vent inspections o Repair records of defects detected during inspections • Maintain records for 5 yrs [40 CFR 63.10(b)(1)]	emissions o Info to demonstrate conformance with SSM plan are consistent with procedures in the plan o Actions taken during SSM when different from SSM plan o CVS design parameters and operational records • Required Record keeping [40 CFR 63.2525]: o Records detailing each operating scenario o Schedule of operations scenarios for processes with batch vents from batch operations updated each time a different operating scenario is put into effect o Records identifying each batch as standard and estimated uncontrolled and controlled emissions for each nonstandard batch o Record each time a safety device is opened to avoid unsafe conditions o Records of CPMS calibration check results and maintenance performed o CEMS records of date and time each deviation started and stopped and if the deviation occurred during an SSM event or another period • Keep records for 5 years [63.10(b)(1)]]	malfunctions; and periods of non-operation • Keep records for 5 years [40 CFR 63.152(f)(3), (5)]	performance tests & CMS performance evaluations [40 CFR 63.7(g)(3), 63.10(b)(2)(viii)] • Closed Vent System Records [40 CFR 63.125263.1259]: o Hourly records of bypass flow indicator operating status, time/ duration of all diversions detected, if complying via this method o Monthly visual inspection records of bypass line valves and periods valve position has changed, if complying via this method o CVS designated as unsafe/difficult to inspect o CVS M21 & visual inspection/leak records • General Record keeping Requirements [40 CFR 63.1259, 63.8, 63.10]: o Keep records for 5 years o Records of operating scenarios o Maintain SOP for all CMSs	o Current and superseded versions of SSM Plan stored at plantsite o Occurrence and duration of each SSM with excess emissions o Info to demonstrate conformance with SSM plan are consistent with procedures in the plan o Actions taken during SSM when different from SSM plan o CVS design parameters and operational records • Required Record keeping [40 CFR 63.2525]: o Records detailing each operating scenario o Schedule of operations scenarios for processes with batch vents from batch operations updated each time a different operating scenario is put into effect o Records identifying each batch as standard and estimated uncontrolled and controlled emissions for each nonstandard batch o Record each time a safety device is opened to avoid unsafe conditions o Records of CPMS calibration check results and maintenance performed o CEMS records of date and time each deviation started and stopped and if the deviation occurred during an SSM event or another period		N/A	N/A
Transfer Racks (D.20)	N/A	N/A	N/A			N/A			N/A	N/A
Reporting Requirements										
BCM and BCM Support Process Vents (D.6 and D.7)	• CEMS, including flow monitor [326 IAC 3-5]: o 35-day notification prior to CMS certification and RATA o Results of cal gas audits for each calendar quarter within thirty (30) calendar days after end of quarter and RATA report within forty-five (45) calendar days after completion of the RATA o Submit SOP if required by NSPS	N/A	• CMS (includes CEMS) and Control Device Reporting Requirements [63.697, 63.9, 63.10]: o Notification of CMSs at least 60 days prior to performance evaluation date o SSM reports if actions are not consistent with SSM plan o Prepare/submit semiannual reports for each control device including excess emissions summary and CMS performance summary o CEMS excursions occur	• CMS (includes CEMS) and Control Device Reporting Requirements [40 CFR 63.2520, 63.1260(g), 63.999]: o Notification of CEMS at least 60 days prior to performance evaluation date o Report deviations from an emission limit, operating limit, or work practice, CEMS out of control periods and whether none of above occurred o Report new/revised operating scenarios and verification that associated operating	• Reporting Requirements [40 CFR 63.151, 63.152]: o Prepare/submit periodic reports semiannually, including daily average values of monitored parameters for excused and unexcused excursions, performance tests , and if no longer recording daily average values	• CMS (includes CEMS) and Control Device Reporting Requirements [40 CFR 63.1260(g), 63.9]: o 60 day notice prior to performance evaluation date o Prepare/submit periodic reports for each control device including excess emissions summary and CMS performance summary; if total duration of excess emissions, parameter exceedances, or excursions is 1% or greater of total operating time OR total CMS	• Control Device and CVS Reporting Requirements: The control device and closed vent system reporting requirements under the Pharma MACT shall serve as the streamlined reporting requirement. • CMS/CEMS Reporting Requirements: o The Pharma MACT CMS/CEMS reporting requirements for TOC and hydrogen halides and halogens shall satisfy the reporting requirements for VOC and fluorides (PSD pollutants), respectively, and shall serve as the streamlined reporting requirement. o The Pharma MACT CEMS reporting requirements shall also satisfy the reporting requirements for NOx/SOx/CO (PSD pollutants) and shall serve as the streamlined reporting requirement. • Performance Test Notification Requirements:		• For HX CEMS or DRE Performance Test [40 CFR 63.7, 63.10]: o Waiver of performance test at least 60 days prior to test date o Notification of performance tests 60 days prior to test date o Upon request, submit site specific test plan 60 days prior to test o Performance test reports within 60 days following test	N/A

Affected Units Controlled by RTO	Applicable Rules							Streamlined Requirements	Alternative Operating Scenarios	
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**PSD BACT Standards (326 IAC 2-2-3)**		**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**
	or NESHAP within 90 days after monitor installation and if revisions made, updates submitted biennially o Quarterly excess emissions and parameters report within 30 days following the quarter o Monitor downtime, except for zero and span checks • Performance Test Reporting Requirements [326 IAC 3-6]: o Submit test protocol at least 35 days prior to test o Schedule test date/time at least 14 days prior to test date o Submit emission test report within 45 days after test complete o Extension allowed for reasonable explanation if submitted within 40 days after test complete		if have <75% valid operating hours. A valid operating hour requires data in each 15-minute segment of the hour. If the control device is operated for less than 4 hours in a day, then an excursion occurs have more than one invalid hour. • Performance Test Requirements [40 CFR 63.7, 63.10]: o Waiver of performance test at least 60 days prior to test date o Notification of performance tests 60 days prior to test date o Upon request, submit site specific test plan 60 days prior to test o Performance test reports within 60 days following test	conditions for the control device have not been exceeded. o SSM reports for SSM with excess emissions; state SSMP was or was not followed and malfunction descriptions [63.2520(e)(4)] o Report each exceedance of a daily average value monitored with a CMS or failure to meet data availability requirements • See Subpart A requirements referenced for Subpart GGG for performance test requirements, except test plan must be submitted if controlling batch process vents • CVS Reporting Requirements [40 CFR 63.999(c)]: o CVS bypass lines with flow indicator: report all periods when vent stream is diverted from control device through bypass line o CVS with bypass lines without flow indicator: report periods which seal mechanism is broken, position has changed or key to unlock bypass line valve was checked out o CVS leak repair details		downtime is greater than 5% for reporting period, include 15-minute data and daily averages for all operating days out of range; duration of excursions; operating logs and operating scenarios for all operating days out of range; or whether none of above occurred o Report each new operating scenario that has been operated since last report • CVS Reporting Requirements [40 CFR 63.1260]: o Periods when vent stream is diverted from control device through bypass line o Periods which seal mechanism is broken, position has changed or key to unlock bypass line valve was checked out • Performance Test Requirements [40 CFR 63.7, 63.10]: o Waiver of performance test at least 60 days prior to test date o Notification of performance tests 60 days prior to test date o Upon request, submit site specific test plan 60 days prior to test o Performance test reports within 60 days following test	The Pharma MACT performance test requirements for TOC and hydrogen halides and halogens satisfy the PSD VOC and fluorides requirements and shall serve as the streamlined reporting requirement.			
BCM Solvent Tanks (D.9)		N/A	N/A		Same as for BCM and BCM Support Process Vents above.				N/A	N/A
BCM Waste Tanks (D.10)		N/A	Same as for BCM and BCM Support Process Vents above.						N/A	N/A
BCM IDSs to control device (D.8)		N/A							N/A	N/A
Transfer Racks (D.20)	N/A	N/A	N/A			N/A			N/A	N/A

1: The MON applies upon operation of a miscellaneous organic chemical manufacturing process unit (MCPU).
2: The HON applies upon operation of a chemical manufacturing process unit (CMPU).

D.15: T79 Control System Operations

Background and Description

Tippecanoe Laboratories utilizes an extensive emission control system to reduce point source emissions from bulk chemical manufacturing (BCM) support operations. The system consists of two major elements. One is an elaborate fume transport system, also known as a closed-vent system, which consists of a series of large-diameter fiberglass ductwork, fans, and instrumentation. This system provides the transport of the fumes from the solvent recovery vents and tank modules (with the exception of T146, which vents to the RTO) to the second system, the T79 control system. The site operates two identical T79 control systems. One T79 unit is in operation while the other is in a maintenance shutdown or on standby.

Types of Emission Units and Pollution Control Equipment

The redundant T79 control systems control VOC and VOHAP emissions from the fume streams exhausted from the BCM solvent recovery operations and support equipment. In addition, the T79 control systems are equipped with caustic scrubbing systems used to control hydrogen halide and halogen emissions from the BCM production and support operations as well as hydrogen halides and halogens formed during combustion. The combustion chamber of each T79 combustion chamber and its associated scrubber make up the T79 control system.

Insignificant Activities

The T79 fume incinerator control system is not considered an insignificant activity pursuant to 326 IAC 2-7-1(21).

Federal and State Rule Applicability/Streamlining Strategy

The T79 control system is utilized to meet the requirements of the following air pollution control requirements dealing with volatile organic compound emissions (VOC), volatile organic hazardous air pollutant emissions (VOHAP), and/or hydrogen halides and halogens (HX):

1. 40 CFR Part 60 Subpart Kb, New Source Performance Standards for VOC Liquid Storage Vessels
2. 40 CFR Part 63 Subpart DD, Off-site Waste and Recovery Operations (OSWRO) MACT
3. 40 CFR Part 63 Subpart GGG, Pharmaceutical Production (Pharma) MACT
4. 40 CFR Part 63 Subpart FFFF, Miscellaneous Organic Chemical Manufacturing NESHAP (MON)
5. 40 CFR Part 63 Subpart F (which incorporates Subparts G and H by reference), NESHAP from the Synthetic Organic Chemical Manufacturing Industry (herein referred to as the HON)
6. 326 IAC 8-5-3, Indiana RACT rule applicable to synthesized pharmaceutical manufacturing facilities; and
7. 326 IAC 2-2, PSD Best Available Control Technology (BACT) Requirements

Multiple Requirement Streamlining and BACT Determination

The applicable regulations have similar standards and performance objectives which provide an opportunity for the Title V permit to consolidate the requirements into streamlined permit terms that comprehensively address all the requirements. Streamlining of overlapping requirements is authorized pursuant to 326 IAC 2-7-24.

The purpose of this streamlining is to demonstrate that the requirements of the RACT Rule for Synthesized Pharma Manufacturing [326 IAC 8-5-3], OSWR MACT [40 CFR Part 63 Subpart DD] and flexible PSD permit requirements can be streamlined into the more stringent applicable requirements of the Pharma MACT [40 CFR Part 63 Subpart GGG], MON [40 CFR Part 63 Subpart FFFF], and/or HON [40 CFR Part 63 Subparts F and G]. Based on the similarities between these standards, the flexible permit requirements identify the Pharma MACT requirements as the streamlined requirements. In any cases in which the MON or HON requirements are more stringent than the Pharma MACT, the requirements of the MON/HON are identified as the streamlined requirement. To the extent possible, the flexible PSD permit requirements mirror the Pharma MACT/MON/HON requirements.

The following table summarizes the requirements for the BCM Operations. The streamlining table contains the following sections and subsections:

Emission Limits and Standards
- TOC Point Source Emission Limits and Standards
- HX and Fluorides Point Source Emission Limits and Standards
- Work Practice Standards – Closed Vent Systems
- Work Practice Standards – Bypass Systems in Closed Vent Systems
- Exceptions to Control Device and Closed Vent System Standards

Compliance Demonstration Methods
- TOC Stack Testing Requirements (if complying with DRE standard)
- HX Stack Testing Requirements (if complying with DRE standard)
- T79 Parametric CMS and Other Parametric Monitoring Requirements
- Scrubber Parametric CMS Requirements
- Closed Vent System and Bypass System Parametric CMS and Other Parametric Monitoring Requirements

Record Keeping and Reporting Requirements

T79 Control System Operations: Streamlining Table

Affected Units Controlled by T79	Applicable Rules							Streamlined Requirements
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**Pharma MACT (40 CFR 63 Subpart GGG)**	**PSD BACT Standards (326 IAC 2-2-3)**	
Emission Limits and Standard								
TOC Point Source Emission Limits and Standards								
BCM Support Process Vents (D.7)	For reactors, distillation operations, crystallizers, centrifuges and vacuum dryers: • Condensers must meet maximum outlet gas temperature requirement or equivalent controls [326 IAC 8-5-3(b)(1)] For air dryers and production equipment exhaust systems (local exhaust vents): • Achieve at least 90% controls for uncontrolled VOC emissions ≥ 330 lb/day [326 IAC 8-5-3(b)(2)(A)] • Reduce VOC emissions to 15 lbs/day or less for uncontrolled VOC emissions < 330 lb/day [326 IAC 8-5-3(b)(2)(B)]	N/A	• 20 ppm TOC, corrected to 3%O2 achieved from a stack test *AND* establish min temp from stack test [40 CFR 63.690(b), 63.693(f)(1)(i)(B) or (f)(1)(ii)(B), and 63.693(f)(3)(i)] or • Alternative operating parameter: 20 ppmv TOC avg. over 24-hr period via CEMS [40 CFR 63.690(b), 63.693(f)(1)(i)(B) or (f)(1)(ii)(B), and 63.693(f)(3)(iii)] or • 95% DRE (individual vent percent reduction standard) *AND* establish min temp from stack test [40 CFR 63.690(b), 63.693(f)(1)(i)(A) or (f)(1)(ii)(A), and 63.693(f)(3)(ii)] or • Maintain temp ≥ 760 F *AND* residence time ≥ 0.5 sec [40 CFR 63.690(b) and 63.693(f)(1)(iii)]	• 98% for process vents *AND* establish 24-hr avg. for min temp determined from worst case compliant stack test [40 CFR 63.2460(a),(b)(5)(ii), Table 2 to Subpart FFFF, 63.2450(e)(1), 63.988(c)(1), 63.988(b)(3), 63.997(e)(1)(iii)] or • Alternative Standard: 20 ppmv TOC via CEMS, avg. over the operating day, *AND* min time of ≥ 0.75 sec (or flow rate) and min temp of ≥ 816 C [40 CFR 63.2505(a)(1)(i)(A) and (b)(8) 63.1258(b)(5)(ii)(A)] and • If an MCPU that includes batch process vents is also part of a CMPU, must comply with the batch process vent requirements in the MON and continue to comply with the HON requirements that are applicable to the CMPU and associated equipment. [40 CFR 63.2535(a)(1)]	For Continuous Process Vents: • 98% for process vents *AND* establish daily avg. for min temp determined from worst case compliant stack test [40 CFR 63.113(a)(2), 114(a)(1)(i) and (e), 63.118(a)(2)] or • 20 ppmv TOC, avg. over the operating day, dry basis, corrected to 3% O2 *AND* establish daily avg. for min temp determined from worst case compliant stack test [40 CFR 63.113(a)(2), 114(a)(1)(i) and (e) , 63.118(a)(2)] or • Request approval for monitoring other parameters [40 CFR 63.114(c), 63.151(f), 63.152(e)(1)] For Batch Process Vents: • None [40 CFR 63.100(j)(4)]	• 98% DRE for individual vents > 25 tpy AND establish 24-hr avg. for min temp determined from worst-case compliant stack test [40 63.1254(a)(3)(i) and 63.1258(b)(1)(vii)] or • Alternative Standard: 20 ppmv TOC via CEMS, avg. over 24-hr period *AND* min time of ≥ 0.75 sec (or flow rate) and min temp of ≥ 816 C [40 CFR 63.1254(c), 63.1258(b)(2) and 63.1258(b)(5)(ii)(A)]	• Reduce VOC/VOHAP by a control efficiency of 98% or more *AND* establish 24-hr average parameters for min temperature determined from worst-case compliant stack test or • Alternative Standard: No more than 20 ppmv VOC/VOHAP via TOC CEMS, based on 24-hour daily average *AND* min time of ≥ 0.75 sec (or flow rate) and min temp of ≥ 816°C (≥ 1500°F)	
BCM Solvent Tanks (D.9)	• Provide a vapor balance system or equivalent control that is at least 90% effective in reducing emissions from truck or railcar deliveries to storage tanks > 7,500L (2,000 gallons) that store VOC with vapor pressures > 28 kPa (4.1 psi) at 20°C and • Install pressure/vacuum conservation vents set at ± 0.2 kPa unless a more effective control system is used [326 IAC 8-5-3(b)(3)]	• 95% DRE or • Residence Time > 0.75 sec and temp > 816C or • Other parameters determined from a design analysis [60.112b(a) and (a)(3)(iii), and 60.113b(c)(1)(i)]	N/A	Meet requirements above for process vents [40 CFR 63.2450(c)(2)]	• **Reduce total organic HAP by ≥95% [40 CFR 63.119(e)(1)]** **or** • **Demonstrate ≥95% reduction standard by design evaluation demonstrating that control device provides minimum residence time of 0.5 seconds at minimum temperature of 760°C [40 CFR 63.120(d)(1)(i)]**	• **95% DRE AND min temp a from worst case stack test for tanks ≥75 m3, VP ≥13.1kPa** [40 CFR 63.1253(c)(1)(i)] or • **Maintain time ≥ 0.5 sec AND temp ≥ 760 C for solvent tanks ≥75 m3, VP ≥13.1kPa [40 CFR 63.1253(c)(2)]** or • Alternative Standard: 20 ppmv TOC avg. over 24-hr period AND min time of ≥ 0.5 sec (or flowrate) and min temp of ≥ 760 C [40 CFR 63.1253(d), 63.1258(b)(2) and 63.1258(b)(5)(ii)(A)]		
BCM Waste Tanks (D.10)	• Provide a vapor balance system or equivalent control that is at least 90% effective in reducing emissions from truck or railcar deliveries to storage tanks > 7,500L (2,000 gallons) that store VOC with vapor pressures > 28 kPa (4.1 psi) at 20°C and • Install pressure/vacuum conservation vents set at ± 0.2 kPa unless a more effective control system is used	• 95% DRE or • Residence Time > 0.75 sec and temp > 816C or • Other parameters determined from a design analysis [60.112b(a) and (a)(3)(iii), and 60.113b(c)(1)(i)]	• 20 ppm TOC, corrected to 3%O2 achieved from a stack test AND establish min temp from stack test [40 CFR 63.962(a)(3)(ii), 63.962(b)(3)(ii)(A), 63.693(f)(1)(i)(B) or (f)(1)(ii)(B), and 63.693(f)(3)(ii)] or • Alternative operating parameter: 20 ppmv TOC avg. over 24-hr period via CEMS [40 CFR 63.962(a)(3)(ii), 63.962(b)(3)(ii)(A), 63.693(f)(1)(i)(B) or (f)(1)(ii)(B), and 63.693(f)(3)(iii)] or • 95% DRE (individual vent percent reduction standard) AND establish min temp from stack test [40 CFR	• 95% DRE achieved via stack testing AND establish min temp from stack test; or • Reduce TOC outlet emissions to ≤ 20 ppmv TOC corrected to 3% O2 or • Minimum residence time of 0.5 seconds at a minimum temperature of 760 °C [40 CFR 63.2485/MON Table 7, 63.139(c)(1)]	• 95% DRE achieved via stack testing AND establish min temp from stack test; or • Reduce TOC outlet emissions to ≤ 20 ppmv TOC corrected to 3% O2 or • Minimum residence time of 0.5 seconds at a minimum temperature of 760 °C [40 CFR 63.139(c)(1)]	• 95% DRE achieved via stack testing *AND* establish min temp from stack test[63.1256(b)(2), 62.1256(e)(1)(ii), and 63.1256(h)(2)(i)(A)] or • 20 ppmv achieved via stack testing *AND* establish min temp from stack test [40 CFR 63.1256(b)(3)(ii), 63.1256(e)(1)(ii), and 63.1256(h)(2)(i)(B)] or • **Maintain residence time ≥ 0.5 sec *AND* temp ≥ 760C [40 CFR 63.1256(b)(3)(ii), 63.1256(e)(1)(ii), and 63.1256(h)(2)(i)(C)]**		

Affected Units Controlled by T79	Applicable Rules							Streamlined Requirements
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**PSD BACT Standards (326 IAC 2-2-3)**	
	[326 IAC 8-5-3(b)(3)]		63.962(a)(3)(ii), 63.962(b)(3)(ii)(A), 63.693(f)(1)(i)(A), and 63.693(f)(3)(iii)] or • Maintain temp > 760 F AND residence time > 0.5 sec [40 CFR 63.962(a)(3)(ii), 63.962(b)(3)(ii)(A), and 63.693(f)(1)(iii)]					
BCM Individual Drain Systems (IDSs) to Control Device (D.8)	N/A	N/A						
Transfer Racks (D.20)	N/A	N/A	N/A	**Meet requirements above for process vents [40 CFR 63.2450(c)(2)]**	• **If HON Group 1 continuous process vents are present, meet requirements for continuous process vents for the combined stream. [40 CFR 63.112(e)(3)(ii)]** or • 98% *AND* establish 24-hr avg. for min temp determined from worst case compliant stack test [40 CFR 63.126(b)(1)] or • 20 ppmv TOC, avg. over the operating day, dry basis, corrected to 3% O2 [40 CFR 63.126(b)(1)] **and** • Only load to tank trucks and rail cars that have current certification with the U.S. Department of Transportation pressure test requirements or have been vapor tested within the last 12-months. Only load to tank trucks or rail cars compatible with and connected to the vapor collection system [40 CFR 63.126(e) (f) (g)]	N/A		
HX (hydrogen halide and halogen) Point Source Emission Limits and Standards								
BCM Support Process Vents (D.7)	N/A	N/A	N/A	• Alternative Standard: 20 ppmv hydrogen halide and halogen HAP, avg. over the operating day, *AND* min residence time of ≥ 0.75 sec (or flowrate) and min temp of ≥ 816 C [40 CFR 63.2505(a)(1)(i)(B) and (b)(8) 63.1258(b)(5)(ii)(A)] or • 99% *AND* establish 24-hr avg. for min scrubber effluent pH, min scrubber liquid flow and max inlet gas flow determined from worst case compliant stack test [40 CFR 63.2465(a) and (c), Table 3 to Subpart FFFF of Part 63, 63.2450(e)(3), 63.994(c)(1), 63.998(a)(2) and (b), 63.997(e)(1)(iii)] or • 0.45 kg/hr for the sum of all batch process vents and each individual continuous process vent *AND* establish 24-hr avg. for min scrubber effluent pH, min scrubber liquid flow and max inlet gas flow determined from worst case compliant stack test [40 CFR 63.2465(a) and (c), Table 3 to Subpart FFFF of Part 63, 63.2450(e)(3), 63.994(c)(1), 63.998(a)(2) and (b), 63.997(e)(1)(iii)]	• 95% hydrogen halides and halogens *AND* establish 24-hr avg. for min scrubber pH and liquid flow, determined from worst case compliant stack test or • 0.45 kg/hr hydrogen halides and halogens *AND* establish 24-hr avg. for min scrubber pH and liquid flow, determined from worst case compliant stack test [40 CFR 63.113(c)(1)(ii), 63.118(a)(2)]	• 20 ppmv HX *AND* establish 24-hr avg for min scrubber liquid flow rate or pressure drop and min pH of effluent scrubber liquid from worst case compliance stack test [40 CFR 63.1254(a)(1)(ii)(A), 63.1257(d)(1)(iii), (a)(6), (b), 63.1258(b)(2), (b)(5)(ii)(A)] or • 98% DRE *AND* for min scrubber liquid flow rate or pressure drop and min pH of effluent scrubber liquid from worst case compliant stack test [40 CFR 63.1254(a)(3)(i), 63.1257(d)(1)(ii), (b), 63.1258(b)(2)] or • Alternative Standard: 20 ppmv HX, measured as HCl via CEMS avg. over 24-hr block period *AND* min residence time of ≥ 0.75 sec (or flowrate) and min temp of ≥ 816 C [63.1254(c), 63.1257(a)(5), 63.1258(b)(2), (b)(5)]	Reduce hydrogen halide and halogen emissions by a control efficiency of 99% or more *AND* establish 24-hr avg. for min scrubber effluent pH, min scrubber liquid flow, max inlet gas flow and max scrubber caustic flowfrom worst case compliant stack test	
BCM Solvent Tanks (D.9)	N/A	N/A	N/A		N/A	• **<u>Tanks >38 m3 to<75 m3, >13.1kPa:</u> 90% DRE for total HAP (VOHAP + HX) and min temp via worst case stack test *AND* establish min recirculation flow rate, min scrubber pH [40 CFR 63.1253(b)(1), 63.1257(c),**		

Affected Units Controlled by T79	Applicable Rules							Streamlined Requirements
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	OSWRO MACT (40 CFR 63 Subpart DD)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)	Pharma MACT (40 CFR Part 63 Subpart GGG)	PSD BACT Standards (326 IAC 2-2-3)	
				or • 20 ppmv hydrogen halide and halogen HAP *AND* establish 24-hr avg. for min scrubber effluent pH, min scrubber liquid flow and max inlet gas flow determined from worst case compliant stack test [40 CFR 63.2465(a) and (c), Table 3 to Subpart FFFF of Part 63, 63.2450(e)(3), 63.994(c)(1), 63.998(a)(2) and (b), 63.997(e)(1)(iii)] •		**63.1258(b)(1)(ii)]** **or** • **<u>Tanks >75 m3, >13.1kPa:</u> 95% DRE and min temp via worst case stack test *AND* establish min recirculation flow rate, min scrubber pH, and max caustic flow rate** [40 CFR 63.1253(c)(1)(i) and 63.1258(b)(1)(ii)] or • Alternative Standard: 20 ppmv HX, measured as HCl via CEMS avg. over 24-hr block period *AND* min residence time of ≥ 0.75 sec (or flowrate) and min temp of ≥ 816 C [63.1253(d), 63.1257(a)(5), 63.1258(b)(2), (b)(5)]		
BCM Waste Tanks (D.10)	N/A	N/A	N/A	Minimum residence time of 0.5 seconds at a minimum temperature of 760 °C [40 CFR 63.2485/MON Table 7, 63.139(c)(1)(iii)]	N/A	• 95% DRE achieved via stack testing AND establish min recirculation flow rate, min scrubber pH or • 20 ppmv HX avg. over 24-hr period (either via CEMS or performance test) [40 CFR 63.1252(g)(1), 63.1258(a), (b)]	• 95% DRE achieved via stack testing AND establish min recirculation flow rate, min scrubber pH or • 20 ppmv HX avg. over 24-hr period (either via CEMS or performance test) and • Minimum residence time of 0.5 seconds at a minimum temperature of 760 °C	
BCM IDSs to Control Device (D.8)	N/A	N/A	N/A		N/A			
Transfer Racks (D.20)	N/A	N/A	N/A	Meet requirements above for process vents [40 CFR 63.2450(c)(2)]	N/A	N/A	Meet requirements above for process vents [40 CFR 63.2450(c)(2)]	
Work Practice Standards – Closed-vent Systems (CVSs)								
BCM Support Process Vents (D.7)	N/A	N/A	For CVSs not under negative pressure: • Initial Method 21 inspections and annual visual inspections for CSV defects; Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping; loose connections; or broken or missing caps or other closure devices [40 CFR 63.685(g)(1)(iv), 63.962(a)(3)(ii), 63.690(b), 63.693(c)(1)(i) and 63.695(c)(1)(i)]; • Repair defects within 5/45 days unless delay of repair allowed [40 CFR 63.695(c)(3)] • Any time a component is repaired or replaced, conduct a Method 21 inspection to demonstrate < 500 ppmv [40 CFR 63.695(c)(1)(ii)(A)] • Inspections not required if unsafe to monitor; develop plan for inspection schedule of unsafe to inspect [40 CFR 63.695(f)] For CVSs under negative pressure: • Annual visual inspections for CSV defects; Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping; loose connections; or broken or missing caps or other closure devices [40	For CVSs not under negative pressure: • Initial Method 21 inspections and annual visual inspections for visible, audible or olfactory indications of leaks on closed vent systems that are hard-piped [40 CFR 63.983(b)(1)(i), (c)(1)] • Repair leaks/failures within 5/15 days, unless delay of repair allowed [40 CFR 63.983(d)] • Inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe/difficult to inspect [40 CFR 63.983(b)(2) and (3)] For CVSs operated under negative pressure: • No inspections required [40 CFR 63.2450(e)(1), 63.982(c), 63.983(a)] • For audible, visible or olfactory leaks, either eliminate leak or monitor under Method 21 (500 ppm) [40 CFR 63.983(d)(1)]; repair leaks within 5/15 days unless delay of repair [40 CFR 63.983(d)(2) and (3)]	None specified	None specified	Closed-vent systems NOT operated under negative pressure: • Initial Method 21 inspections on closed vent systems • Annual visual inspections for defects on closed vent systems • Initial and annual • inspection must be completed during filling of the storage vessels [40 CFR 63.120(d)(6)] • Repair detected defects within 5/15 days, except where delay of repair is allowed • Any time a component is repaired or replaced, conduct a Method 21 inspection to demonstrate < 500 ppmv Closed-vent systems operated under negative pressure: • Annual visual inspections for defects such as visible cracks/holes/gaps in ductwork/piping; loose connections; or broken/missing caps • Repair detected defects within 5/45 days, except where delay of repair allowed • Not required to test or inspect if unsafe or difficult to monitor	
BCM Solvent Tanks (D.9)	N/A	N/A		For CVS not under negative pressure [40 CFR Part 63 Subpart FFFF Table 7, 63.133(a)(2), (b)(3), 136(b)(3), (e)(2)(i)]:	For CVS not under negative pressure: • Initial Method 21 inspections and annual inspections for visible, audible or	None Specified		
BCM Waste Tanks (D.10)	N/A	N/A				For CVSs not under negative pressure:		

Affected Units Controlled by T79	Applicable Rules							Streamlined Requirements
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**PSD BACT Standards (326 IAC 2-2-3)**	
BCM IDSs to Control Device (D.8)	N/A	N/A	CFR 63.685(g)(1)(iv), 63.962(a)(3)(ii), 63.690(b), 63.693(c)(1)(i) and 63.695(c)(2)(i)] • Repair defects within 5/45 days unless delay of repair allowed [40 CFR 63.695(c)(3)] • Inspections not required if unsafe to monitor; develop plan for inspection schedule of unsafe to inspect [40 CFR 63.695(f)] NOTE: These requirements do not apply to solvent tanks. Solvent tanks are not regulated under the Offsite Waste MACT.	• Initial Method 21 inspections and annual inspections for visible, audible or olfactory indications of leaks on CVS and on each fixed roof, cover and enclosure [40 CFR 63.148(b)(1), (b)(3)] • Initial and annual inspection must be completed during filling of the storage vessels [40 CFR 63.120(d)(6)] • Repair leaks monitored under Methods 21 (500 ppm) or by visual inspection within 5/15 days, unless delay of repair allowed [40 CFR 63.148(e)] • Inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe/difficult to inspect [40 CFR 63.148(g), (h)] For CVSs under negative pressure: • No inspections required [40 CFR 63.120(d)(7), 63.128(e)(3), 63.133(b)(4), 63.134(b)(5), 63.136(b)(4)]	olfactory indications of leaks on CVS [40 CFR 63.148(b)(1), (b)(3)] • Initial and annual inspection must be completed during filling of the storage vessels [40 CFR 63.120(d)(6)] • Repair leaks monitored under Methods 21 (500 ppm) or by visual inspection within 5/15 days, unless delay of repair allowed [40 CFR 63.148(e)] • Inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe/difficult to inspect [40 CFR 63.148(g), (h)] For CVSs under negative pressure: • No inspections required [40 CFR 63.120(d)(7), 63.128(e)(3), 63.133(b)(4), 63.134(b)(5), 63.136(b)(4)]	• Initial Method 21 inspections and annual visual inspections for visible, audible or olfactory indications of leaks on closed vent systems that are hard-piped [40 CFR 63.1256(b)(3)(iii), 63.1256(e)(1)(iii), 63.1258(h)(2)(i) and 63.1258(h)(10)] • Repair leaks/failures within 5/15 days, unless delay of repair allowed [40 CFR 63.1258(h)(4) and (5)] • Inspections not required if unsafe/difficult to monitor; develop plan for inspection schedule of unsafe/difficult to inspect [40 CFR 63.1258(h)(6) and (7)] For CVSs operated under negative pressure: • No inspections required [40 CFR 63.1256(b)(3)(iv) and 63.1256(e)(1)(iv)]		
Transfer Racks (D.20)	N/A	N/A	N/A			N/A		
Work Practice Standards – Bypass Systems in Closed Vent System								
BCM Support Process Vents (D.7)	N/A	N/A	None Specified	• Continuous flow indicator at inlet of bypass line and hourly records. [40 CFR 63.2450(e)(1), 63.982(c), 63.983(a)(3)(i) and (b)(4)(i), 93.998(d)(1)(ii)(A)] or • Monthly visual inspection of seal or locking device on the mechanism by which the bypass device position is controlled to ensure the device is in the closed position and that the seal is not broken. [40 CFR 63.2450(e)(1), 63.982(c), 63.983(a)(3)(ii) and (b)(4)(ii), 93.998(d)(1)(ii)(B)]	• Continuous flow indicator at inlet of bypass line and hourly records. [40 CFR 63.114(d)(1), 118(a)(3), 148(f)(1), (f)(3)] or • Monthly visual inspection of seal or locking device on the mechanism by which the bypass device position is controlled to ensure the device is in the closed position and that the seal is not broken. [40 CFR 63.114(d)(2), 63.118(a)(4), 148(f)(2), (f)(3)]	• Continuous flow indicator at inlet of bypass line at least once every 15 minutes. [40 CFR 63.1252(b)(1), 63.1253(b) and (c), Table 4, 63.1258(b)(1)(xi)] or • Monthly visual inspection of seal or locking device on the mechanism by which the bypass device position is controlled to ensure the device is in the closed position and that the seal is not broken [40 CFR 63.1252(b)(2), 63.1253(b) and (c), Table 4, 63.1258(b)(1)(xi)]	• Continuous flow indicator at inlet of bypass line at least once every 15 minutes. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, rupture disks and pressure relief valves needed for safety purposes are not subject to this requirement or • Monthly visual inspection of seal or locking device on the mechanism by which the bypass device position is controlled to ensure the device is in the closed position and that the seal is not broken.	
BCM Solvent Tanks (D.9)	N/A	N/A	N/A					
BCM Waste Tanks (D.10)	N/A	N/A	• Continuous flow indicator at inlet of bypass [40 CFR 63.693(c)(2)(i)] or • Monthly visual inspection of seal or locking device on the mechanism by which the bypass device position is controlled to ensure the device is in the closed position and that the seal is not broken [40 CFR 63.693(c)(2)(ii)] [40 CFR 63.685(g)(1)(iv), 63.962(a)(3)(ii)]					
BCM IDSs to Control Device (D.8)	N/A	N/A						
Transfer Racks (D.20)	N/A	N/A	N/A			N/A		
Exceptions to Control Device and Closed-Vent System (T79 Fume Incinerator System) Standards								
BCM Support Process Vents (D.7)	N/A	N/A	N/A	• Equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines are not subject to Bypass System work practices. [40 CFR 63.2450(e)(1), 63.982(c), 63.983(a)(3)(i) and (b)(4)(i) & (ii), 93.998(d)(1)(ii)(A) & (B)] • Opening of a safety device, as defined in 63.2550, is allowed at any time to avoid an unsafe conditions [40 CFR 63.2450(p)] • Control except for SSM events [63.2450(a)]	Equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines are not subject to Bypass System work practices. [40 CFR 63.114(d)(1) & (2), 63.118(a)(3) & (4), 148(f)(1) & (2), (f)(3)]	• Equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines are not subject to Bypass System work practices. [40 CFR 63.1252(b)(1) and (2), 63.1253(b) and (c), Table 4, 63.1258(b)(1)(xi)] • Opening of a safety device, as defined in 63.1251, is allowed at any time to avoid an unsafe conditions [40 CFR 63.1252(a)]	• Equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines are not subject to Bypass System work practices. • Opening of a safety device is allowed at any time to avoid an unsafe conditions] • Control except for SSM events (with exception of processes subject to MACT rules that do not have SSM provisions)	
BCM Solvent Tanks (D.9)	N/A	N/A	N/A					
BCM Waste Tanks (D.10)	N/A	N/A	• Opening of a safety device, as defined in 63.681 is allowed at any time conditions require it to do so to avoid an unsafe conditions [40 CFR 63.685(g)(2)(ii) and 63.681] • The control device may be bypassed for purposes of correcting a malfunction of the closed vent system or control device [40 CFR 63.693(b)(3)(ii)]					
BCM IDSs to Control Device (D.8)	N/A	N/A						
Transfer Racks (D.20)	N/A	N/A	N/A			N/A		

Affected Units Controlled by T79	Applicable Rules							Streamlined Requirements
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**PSD BACT Standards (326 IAC 2-2-3)**	
Compliance Demonstration Methods								
TOC Continuous emissions monitoring (CEMS) and Continuous monitoring system (CMS) requirements (if complying with 20 ppmv TOC alternative standard) – Refer to Section D.14 RTO Table for these requirements								
TOC Stack Testing requirements								
BCM Support Process Vents (D.7)	When demonstrating compliance with the DRE standard, facilities subject to NSPS or NESHAP shall be tested under conditions specified in that applicable provision [326 IAC 3-6-3]	N/A	• The methods specified in 40 CFR 63.693(f)(2)(i), 63.694(l)(1)(i), 63.694(l)(3) shall be used if demonstrating compliance with the DRE standard • The methods specified in 40 CFR 63.693(f)(2)(i), 63.694(l)(1)(ii), 63.694(l)(4) shall be used if demonstrating compliance with the concentration standard via stack test	The following stack testing requirements apply when demonstrating compliance with the DRE standard: • Submit site-specific plan prior to testing as required by 40 CFR 63.7 and 63.999(a)(1)(i) • Conduct test under worst-case conditions or hypothetical worst-case conditions via max load to control device in accordance with 40 CFR 63.1257(b)(8) • Perform testing on inlet and outlet of control device [40 CFR 63.2460(c)(2)(ii), 63.2450(e)(1), 63.982(c)(2), 63.988(b)(1), 63.997(a), (d), (e)(1)(v), (e)(2)] • Measure and continuously record the following parameters during stack test to develop operating parameter limits: o Temperature [40 CFR 63.2450(e)(1), 63.982(c)(2), 63.988(c)(2), 998(a)(2)(ii)(B)	The following stack testing requirements apply when demonstrating compliance with the DRE standard: • Submit site-specific plan prior to testing as required by 40 CFR 63.7 and 63.103(b)(2) • Conduct test at maximum or minimum representative operating conditions, whichever results in lower emissions reduction 40 CFR 63.103(b)(3) • Perform testing on inlet and outlet of control device [40 CFR 63.116(c), 103(b)] • Measure and continuously record the following temperature during stack test to develop operating parameter limits [40 CFR 63.114(e), 117(f)])	• Submit site-specific plan prior to testing as required by 63.7 and 63.1260(l) • Conduct test under worst-case conditions or hypothetical worst-case conditions via max load to control device • Measure gas stream volumetric flow rates at least every 15 minutes • Perform testing on inlet and outlet of control device [63.1257(c)(1)(iii), 63.1257(d)(1)(ii)(A), 63.1257(d)(3)(ii), 63.1257(b)(8)] • Measure and record incinerator temperature during stack test to develop operating parameter limits	• Submit site-specific plan prior to testing as required by 40 CFR 63.7, 63.999(a)(1)(i), 63.103(b)(2) and 63.1260(l) • Conduct test under worst-case conditions or hypothetical worst-case conditions via max load to control device • Measure gas stream volumetric flow rates at least every 15 minutes • Perform testing on inlet and outlet of control device [63.1257(c)(1)(iii), 63.1257(d)(1)(ii)(A), 63.1257(d)(3)(ii), 63.1257(b)(8)] • Measure and record incinerator temperature during stack test to develop operating parameter limits	
BCM Solvent Tanks (D.9)		N/A	N/A		**Meet combined stream for either:** • **Group 1 continuous process vents** • **Group 1 transfer racks** **[40 CFR 63.112(e)(3)(ii)]**			
BCM Waste Tanks (D.10)		N/A	Meet requirements above for process vents		**Meet combined stream for either:** • **Group 1 continuous process vents** • **Group 1 transfer racks** • **Group 1 storage vessels** **[40 CFR 63.112(e)(3)(ii)]**			
BCM IDSs to Control Device (D.8)	N/A	N/A						
Transfer Racks (D.20)	N/A	N/A	N/A		**Meet requirements for Group 1 continuous process vents for the combined stream [40 CFR 63.112(e)(3)(ii), 63.128(a)(1)]**	N/A		
HX Continuous CEMS requirements (if complying with 20 ppmv HX alternative standard) – Refer to Section D.14 RTO Table for these requirements								
HX Stack Testing requirements								
BCM Support Process Vents (D.7)	When demonstrating compliance with the DRE standard, facilities subject to NSPS or NESHAP shall be tested under conditions specified in that applicable provision [326 IAC 3-6-3]	N/A	N/A	• Submit site-specific plan prior to testing as required by 40 CFR 63.7 and 63.999(a)(1)(i) • Conduct test under worst-case conditions or hypothetical worst-case conditions via max load to control device [40 CFR 63.1257(b)(8) and 63.997(e)(1)(iii)] • Perform testing on inlet and outlet of control device [40 CFR 63.2460(c)(2)(ii), 63.2450(e)(3), 63.994, 63.988(b)(1), 63.997(a), (d), (e)(1)(v), (e)(3)] • Measure and continuously record scrubber pH, liquid flow and gas stream flow during stack test to develop operating parameter limits [40 CFR 63.2450(e)(3), 63.994, 998(a)(2)(ii)(D), (a)(4)	• Submit site-specific plan prior to testing as required by 40 CFR 63.7 and 63.103(b)(2) • Conduct test at maximum or minimum representative operating conditions, whichever results in lower emissions reduction 40 CFR 63.103(b)(3) • Perform testing on inlet and outlet of control device [63.116(d), 103(b)] • Measure and continuously record scrubber pH, liquid flow and gas stream flow during stack test to develop operating parameter limits [40 CFR 63.114(a)(4), (e), 117(f)]	• Temperature CMS requirements, if complying with the DRE standard or the 20 ppmv TOC alternative standard [63.1258(b)(1)(vii)]: o Measure and record a data point at least once every 15 minutes when burning fume streams o Monitor device must be accurate to within ±0.75% of C temp or ±2.5C, whichever is greater o Calibrate annually o O&M and quality control for CMSs [40 CFR 63.1258(b)(1)(x), (b)(5)(i)(A), and 63.8(c)(1), (d)] • No performance specifications referenced for residence time (or flowrate) CMS requirements for 20 ppmv TOC alternative std [40 CFR 63.1258(a) and (b)(5)(i)(A), and 63.1260(e)]	<u>The following stack testing requirements for hydrogen halides and halogens under the Pharma MACT shall satisfy the fluorides compliance determination requirements and serve as the streamlined requirement to demonstrate compliance with the control efficiency standard:</u> - Submit site-specific plan prior to testing as required by 63.7 and 63.1260(l) - Conduct test under worst-case conditions or hypothetical worst-case conditions via max load to control device - Measure gas stream volumetric flow rates at least every 15 minutes - Perform testing on inlet and outlet of control device [63.1257(c)(1)(iii), 63.1257(d)(1)(ii)(A), 63.1257(d)(3)(ii), 63.1257(b)(8)] - Measure and record scrubber pH - Measure recirculation flow rate - Measure caustic flow rate	
BCM Solvent Tanks (D.9)		N/A	N/A		N/A			

Affected Units Controlled by T79	Applicable Rules							Streamlined Requirements
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**PSD BACT Standards (326 IAC 2-2-3)**	
BCM Waste Tanks (D.10)		N/A	N/A		N/A			
BCM IDSs to Control Device (D.8)		N/A	N/A		N/A			
Transfer Racks (D.20)	N/A	N/A	N/A		**Meet requirements for Group 1 continuous process vents for the combined stream [40 CFR 63.112(e)(3)(ii), 63.128(a)(1)]**	N/A		
T79 Fume Incinerator Parametric Continuous Monitoring System (CMS) and other monitoring requirements								
BCM Support Process Vents (D.7)	Air Flow Monitor Requirements: • Measure/record each successive 15-minute measuring period [326 IAC 3-5-2(2)(B)] • Annual RATA [326 IAC 3-5-5(e) and 40 CFR 60, Appx F, Proc 1] • Initial monitor system certifications within 180 days upon startup (permit issuance date) [326 IAC 3-5-3(1)(A)] • Monitor system certifications of monitor replacement or significant monitor repair within 45 days following the change [326 IAC 3-5-3(1)(B)] • QC requirements [326 IAC 3-5-5(d)]	N/A	Temperature CMS requirements, if complying with the TOC DRE standard: • Measure and record a data point at least once every 15 minutes when burning fume streams [40 CFR 63.693(b)(4), (f)(3)(i)] • O&M for CMSs [40 CFR 63.8(c)(1)] NOTE: These requirements do not apply to solvent tanks. Solvent tanks are not regulated under the Offsite Waste MACT	• Temperature CMS requirements if complying with 20 ppmv TOC alternative standard [63.1258(b)(1)(vii)]: o Measure and record a data point at least once every 15 minutes when burning fume streams o Temperature monitoring device must be accurate to within ±1% of C temp or ±1.2C, whichever is greater [63.981] o Calibrate according to manufacturer's specifications or other written procedures o O&M and quality control for CMSs [63.2505(b), 63.1258(b)(5)(i), (ii)(A), 63.2450(k), 63.981, 63.996(c)] • No performance specifications referenced for residence time (or flowrate) CMS requirements for 20 ppmv TOC alternative std [40 CFR 63.2505(b), 63.1258(b)(5)(i), (ii)(A)]	• Temperature CMS requirements [40 CFR 63.112(e)(3)(ii), 63.114(a)(1), 63.127(a)(1), 63.143(g)]: o Measure and record a data point at least once every 15 minutes when burning fume streams o Temperature monitoring device must be accurate to within ±1% of C temp or ±0.5C, whichever is greater [40 CFR 63.111] o Calibrate according to manufacturer's specifications or other written procedures o O&M and quality control for CMSs [40 CFR 63.8(c)(1)] • No performance specifications referenced for residence time (or flowrate) CMS requirements for 20 ppmv TOC alternative std [40 CFR 63.2505(b), 63.1258(b)(5)(i), (ii)(A)]	• Temperature CMS requirements, if complying with the DRE standard or the 20 ppmv TOC alternative standard [63.1258(b)(1)(vii)]: o Measure and record a data point at least once every 15 minutes when burning fume streams o Monitor device must be accurate to within ±0.75% of C temp or ±2.5C, whichever is greater o Calibrate annually o O&M and quality control for CMSs [40 CFR 63.1258(b)(1)(x), (b)(5)(i)(A), and 63.8(c)(1), (d)] • No performance specifications referenced for residence time (or flowrate) CMS requirements for 20 ppmv TOC alternative std [40 CFR 63.1258(a) and (b)(5)(i)(A), and 63.1260(e)]	Temperature CMS requirements: • Measure and record a data point at least once every 15 minutes when burning fume streams • Monitor device must be accurate to within ±0.75% of C temp or ±0.5C, whichever is greater • Calibrate annually • O&M and quality control for CMSs The flow monitor CMS requirements under 326 IAC 3-5 shall serve as the streamlined requirement to demonstrate compliance with residence time: • Measure/record each successive 15-minute measuring period [326 IAC 3-5-2(2)(B)] • Annual RATA [3-5-5(e) and 40 CFR 60, Appx F, Proc 1] • Initial monitor system certifications within 180 days upon startup (permit issuance date) [3-5-3(1)(A)] • Monitor system certifications of monitor replacement or significant monitor repair within 45 days following the change [3-5-3(1)(B)] • QC requirements [3-5-5(d)]	
BCM Solvent Tanks (D.9)		N/A						
BCM Waste Tanks (D.10)		N/A						
BCM IDSs to Control Device (D.8)		N/A						
Transfer Racks (D.20)	N/A	N/A	N/A			N/A		
Scrubber Parametric CMS and other monitoring requirements								
BCM Support Process Vents (D.7)	N/A	N/A	N/A	• For scrubber liquid flow rate, scrubber effluent pH and liquid to gas ratio CMS requirements: o Measure and record a data point at least once/15 minutes when process is in operation o Calibrate according to manufacturer's specifications or other written procedures o O&M and QC for CMSs [40 CFR 63.8(c)(1)] • Determine gas stream flow using one of the options in 40 CFR 63.994(c)(1)(ii) [40 CFR 63. 2465(c), 63.994(c)(1), 63.998(a)(2)(ii)(D)(3) and (b)]]	• Scrubber pH, liquid flow and gas flow rate CMS requirements [40 CFR 63.114(a), 63.127(a)]: o Measure and record a data point at least once/15 minutes when process is in operation o Monitor accuracy not specified o Calibrate according to manufacturer's specifications or other written procedures o O&M and QC for CMSs [40 CFR 63.8(c)(1)] • Measure effluent scrubber liquid pH once per day [40 CFR 63.114(a) and Table 3, 63.127(a) and Table 7]: • Determine gas stream flow using one of the options in 40 CFR 63.114(a), 63.127(a)	• Scrubber liquid flow rate CMS requirements [40 CFR 63.1258(b)(1)(ii)]: o Measure & record a data point at least once/15 minutes when process is in operation o Monitor must be certified by the mfr to be accurate within ±10% of design scrubber liquid flowrate o Calibrate annually o O&M and QC for CMSs [40 CFR 63.1258(b)(1)(x), (b)(5)(i)(A), and 63.8(c)(1) and (d)] • Measure effluent scrubber liquid pH once per day [40 CFR 63.1257(b)(8), 63.1258(b)(1)(ii) and 63.1260(e)]: • Measure caustic flow rate in accordance with 40 CFR 63.8(c)(1) and (d) to demonstrate compliance with control device maximum as outlined in the NOC	When applying the control efficiency standard, the following streamlined compliance demonstration requirements shall satisfy the hydrogen halides/halogens requirements under Pharma MACT, MON, HON and PSD fluoride BACT requirements: • Scrubber liquid flow rate, scrubber effluent pH, caustic liquid flow rate and inlet gas stream flow CMS requirements in accordance with 63.8(c)(1) and (d): o Measure and record a data point at least once/15 minutes when process is in operation o Monitor must be certified by the mfr to be accurate within ±10% of design scrubber liquid flowrate o Calibrate annually o O&M and QC for CMSs o Determine gas stream flow using one of the options in 40 CFR 63.994(c)(1)(ii) -	
BCM Solvent Tanks (D.9)	N/A	N/A	N/A					
BCM Waste Tanks (D.10)	N/A	N/A	N/A					
BCM IDSs to Control Device (D.8)	N/A	N/A	N/A					
Transfer Racks (D.20)	N/A	N/A	N/A			N/A		

Affected Units Controlled by T79	Applicable Rules							Streamlined Requirements
	RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	**NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)**	**OSWRO MACT (40 CFR 63 Subpart DD)**	**MON[1] (40 CFR Part 63 Subpart FFFF)**	**HON[2] (40 CFR Part 63 Subparts F, G, H)**	**Pharma MACT (40 CFR Part 63 Subpart GGG)**	**PSD BACT Standards (326 IAC 2-2-3)**	
Record Keeping and Reporting Requirements								
ing Requirements								
BCM Support Process Vents (D.7)	• CEMS, including flow monitor [326 IAC 3-5-6]: o raw data; o design/installation/ testing o corrective action or compliance plan, if applicable o maintenance logs o calibration checks and other QA activities o corrective and preventive action o facility downtime periods and reason for each downtime • Keep records of all test protocols, raw testing and support data, emission test results, and emission test reports for a minimum of 5 years. • Retain monitoring data and supporting info for 5 years [326 IAC 3-5-6(a)] • Maintain SOP for all CEMS [326 IAC 3-5-4(a)]	N/A	NOTE: The solvent storage tanks not subject to these conditions. • CMS (includes CEMS) and Control Device Records [40 CFR 63.693(b)(7), 63.696, 63.6, 63.10]: o Occurrence/duration records of each malfunction o Duration of each period during a malfunction when fumes continue to vent to the control device o Actions taken during periods of malfunction to restore control device to normal operation o All maintenance performed on control device equipment o Current and superseded versions of SSM Plan stored at plantsite o Each SSM occurrence/duration o Actions taken during SSM when different from SSM plan o Info to demonstrate conformance with SSM plan are consistent with procedures in the plan o Malfunctioning/inoperative CMS periods o All required CMS measurements to demonstrate compliance with a standard • Results of control device performance tests & CMS performance evaluations [40 CFR 63.7(g)(3), 63.10(b)(2)(viii)] • Closed Vent System Records [40 CFR 63.693(b), 63.695(c), 63.10: o Closed vent inspections o Repair records of defects detected during inspections • Maintain records for 5 yrs [40 CFR 63.10(b)(1)]	• CMS (includes CEMS) and Control Device (RTO) Records [40 CFR 63.2450(k)(1), 63.998, 63.6, 63.10]: o Occurrence/duration records of each malfunction of RTO and CMS o CMS calibration checks and maintenance records o Malfunctioning/inoperative CMS periods o All required CMS measurements to demonstrate compliance with a standard o Current and superseded versions of SSM Plan stored at plantsite o Occurrence and duration of each SSM with excess emissions o Info to demonstrate conformance with SSM plan are consistent with procedures in the plan o Actions taken during SSM when different from SSM plan o CVS design parameters and operational records • Required Record keeping [40 CFR 63.2525]: o Records detailing each operating scenario o Schedule of operations scenarios for processes with batch vents from batch operations updated each time a different operating scenario is put into effect o Records identifying each batch as standard and estimated uncontrolled and controlled emissions for each nonstandard batch o Record each time a safety device is opened to avoid unsafe conditions o Records of CPMS calibration check results and maintenance performed o CEMS records of date and time each deviation started and stopped and if the deviation occurred during an SSM event or another period • Keep records for 5 years [63.10(b)(1)]]	• Required Record keeping [40 CFR 63.152]: o Record each measured parameter data values or block average values for 15-minute or shorter periods and block hourly average values o Daily average values of each continuously monitored parameter calculated each operating day o Time and duration of monitoring system breakdowns, repairs, calibration checks, and zero and high-level adjustments; start-ups; shutdowns; malfunctions; and periods of non-operation • Keep records for 5 years [40 CFR 63.152(f)(3), (5)]	• CMS (includes CEMS) and Control Device (RTO) Records [40 CFR 63.1259, 63.10: o Malfunction occurrence/duration records o RTO operating parameter data o Description of worst-case operating conditions, (for DRE standard) o RTO system maintenance records o CMS data, calibration checks and maintenance records o Malfunctioning /inoperative CMS periods • Results of control device performance tests & CMS performance evaluations [40 CFR 63.7(g)(3), 63.10(b)(2)(viii)] • Closed Vent System Records [40 CFR 63.125263.1259]: o Hourly records of bypass flow indicator operating status, time/ duration of all diversions detected, if complying via this method o Monthly visual inspection records of bypass line valves and periods valve position has changed, if complying via this method o CVS designated as unsafe/difficult to inspect o CVS M21 & visual inspection/leak records • General Record keeping Requirements [40 CFR 63.1259, 63.8, 63.10]: o Keep records for 5 years o Records of operating scenarios o Maintain SOP for all CMSs	NOTE: Although MACT recordkeeping requirements do not apply to NOx/SOx/CO CEMS and flow monitor, the Permittee shall comply with these more stringent record keeping requirements to satisfy 326 IAC 2-7-5(3). • Maintain record of operating plan that describes parameters monitored to demonstrate compliance with control device standards [40 CFR 60.115(b)(c)(1)] • SOP for all CEMS shall follow the requirements of 326 IAC 3-5-4(a) because more restrictive than 63.8(d) • CMS (includes CEMS) and Control Device (RTO) Records: o Occurrence/duration records of each malfunction of RTO and CMS o CMS calibration checks and maintenance records o Malfunctioning/inoperative CMS periods o All required CMS measurements to demonstrate compliance with a standard o Current and superseded versions of SSM Plan stored at plantsite o Occurrence and duration of each SSM with excess emissions o Info to demonstrate conformance with SSM plan are consistent with procedures in the plan o Actions taken during SSM when different from SSM plan o CVS design parameters and operational records • Required Record keeping [40 CFR 63.2525]: o Records detailing each operating scenario o Schedule of operations scenarios for processes with batch vents from batch operations updated each time a different operating scenario is put into effect o Records identifying each batch as standard and estimated uncontrolled and controlled emissions for each nonstandard batch o Record each time a safety device is opened to avoid unsafe conditions o Records of CPMS calibration check results and maintenance performed o CEMS records of date and time each deviation started and stopped and if the deviation occurred during an SSM event or another period	
BCM Solvent Tanks (D.9) BCM Waste Tanks (D.10)		• Maintain record of operating plan that describes parameters monitored to demonstrate compliance with control device standards [40 CFR 60.115b(c)(1)] • Records of all measured values/parameters monitored [40 CFR 60.115b(c)(2)]						
BCM IDSs to Control Device (D.8)		N/A						
Transfer Racks (D.20)	N/A	N/A	N/A			N/A		
Reporting Requirements								
BCM Support Process Vents (D.7)	• CEMS, including flow monitor [326 IAC 3-5]: o 35-day notification prior to CMS certification and RATA o Results of cal gas audits for each calendar quarter within thirty (30) calendar days after end of quarter and RATA report within forty-five (45) calendar days after completion of the RATA	N/A	• CMS (includes CEMS) and Control Device Reporting Requirements [63.697, 63.9, 63.10]: o Notification of CMSs at least 60 days prior to performance evaluation date o SSM reports if actions are not consistent with SSM plan o Prepare/submit semiannual reports for each control device including excess emissions summary and CMS performance summary o CEMS excursions occur if have	• CMS (includes CEMS) and Control Device Reporting Requirements [40 CFR 63.2520, 63.1260(g), 63.999]: o Notification of CEMS at least 60 days prior to performance evaluation date o Report deviations from an emission limit, operating limit, or work practice, CEMS out of control periods and whether none of above occurred o Report new/revised operating scenarios and verification that associated operating conditions for the control device have not been	• Reporting Requirements [40 CFR 63.151, 63.152]: o Prepare/submit periodic reports semiannually, including daily average values of monitored parameters for excused and unexcused excursions, performance tests , and if no longer recording daily average values	• CMS (includes CEMS) and Control Device Reporting Requirements [40 CFR 63.1260(g), 63.9]: o 60 day notice prior to performance evaluation date o Prepare/submit periodic reports for each control device including excess emissions summary and CMS performance summary; if total duration of excess emissions, parameter exceedances, or excursions is 1% or greater of total operating time OR total CMS	• Control Device and CVS Reporting Requirements: The control device and closed vent system reporting requirements under the Pharma MACT shall serve as the streamlined reporting requirement. • CMS/CEMS Reporting Requirements: o The Pharma MACT CMS/CEMS reporting requirements for TOC and hydrogen halides and halogens shall satisfy the reporting requirements for VOC and fluorides (PSD pollutants), respectively, and shall serve as the streamlined reporting requirement. o The Pharma MACT CEMS reporting requirements	

Affected Units Controlled by T79	Applicable Rules: RACT Rule for Synthesized Pharma Mfg (326 IAC 8-5-3)	NSPS for VOC Storage Vessels (40 CFR Part 60 Subpart Kb)	OSWRO MACT (40 CFR 63 Subpart DD)	MON[1] (40 CFR Part 63 Subpart FFFF)	HON[2] (40 CFR Part 63 Subparts F, G, H)	Pharma MACT (40 CFR Part 63 Subpart GGG)	PSD BACT Standards (326 IAC 2-2-3)	Streamlined Requirements
	o Submit SOP if required by NSPS or NESHAP within 90 days after monitor installation and if revisions made, updates submitted biennially o Quarterly excess emissions and parameters report within 30 days following the quarter o Monitor downtime, except for zero and span checks • Performance Test Reporting Requirements [326 IAC 3-6]: o Submit test protocol at least 35 days prior to test o Schedule test date/time at least 14 days prior to test date o Submit emission test report within 45 days after test complete o Extension allowed for reasonable explanation if submitted within 40 days after test complete		<75% valid operating hours. A valid operating hour requires data in each 15-minute segment of the hour. If the control device is operated for less than 4 hours in a day, then an excursion occurs have more than one invalid hour. • Performance Test Requirements [40 CFR 63.7, 63.10]: o Waiver of performance test at least 60 days prior to test date o Notification of performance tests 60 days prior to test date o Upon request, submit site specific test plan 60 days prior to test o Performance test reports within 60 days following test	exceeded. o SSM reports for SSM with excess emissions; state SSMP was or was not followed and malfunction descriptions [63.2520(e)(4)] o Report each exceedance of a daily average value monitored with a CMS or failure to meet data availability requirements • See Subpart A requirements referenced for Subpart GGG for performance test requirements, except test plan must be submitted if controlling batch process vents • CVS Reporting Requirements [40 CFR 63.999(c)]: o CVS bypass lines with flow indicator: report all periods when vent stream is diverted from control device through bypass line o CVS with bypass lines without flow indicator: report periods which seal mechanism is broken, position has changed or key to unlock bypass line valve was checked out o CVS leak repair details		downtime is greater than 5% for reporting period, include 15-minute data and daily averages for all operating days out of range; duration of excursions; operating logs and operating scenarios for all operating days out of range; or whether none of above occurred o Report each new operating scenario that has been operated since last report • CVS Reporting Requirements [40 CFR 63.1260]: o Periods when vent stream is diverted from control device through bypass line o Periods which seal mechanism is broken, position has changed or key to unlock bypass line valve was checked out • Performance Test Requirements [40 CFR 63.7, 63.10]: o Waiver of performance test at least 60 days prior to test date o Notification of performance tests 60 days prior to test date o Upon request, submit site specific test plan 60 days prior to test o Performance test reports within 60 days following test	shall also satisfy the reporting requirements for NOx/SOx/CO (PSD pollutants) and shall serve as the streamlined reporting requirement. • Performance Test Notification Requirements: The Pharma MACT performance test requirements for TOC and hydrogen halides and halogens satisfy the PSD VOC and fluorides requirements and shall serve as the streamlined reporting requirement.	
BCM Solvent Tanks (D.9)		N/A	N/A		Same as for BCM Support Process Vents above.			
BCM Waste Tanks (D.10)		N/A	Same as for BCM Support Process Vents above.					
BCM IDSs to Control Device (D.8)		N/A						
Transfer Racks (D.20)	N/A	N/A	N/A			N/A		

D.16: Building T171 Research and Development Operations and Pharmaceutical Manufacturing Operations

Background and Description

Many research and development (R&D) operations at the plant site occur in Building T171. The equipment in Building T171 mimics the equipment in the production buildings, but on a much smaller scale. The primary purpose of the Building T171 facilities is to conduct R&D into new processes and products for customers. The T171 facilities are typically not used to manufacture products for sale, but occasionally, a small commercial campaign may be conducted in building T171. The following summary of the Building T171 operations has been prepared to document technical information used to prepare the Title V permit conditions and to demonstrate compliance with the Title V permit requirements.

Types of Emission Units and Pollution Control Equipment

The Building T171 R&D and pharmaceutical manufacturing operations of small process tanks (many are portable), charge tanks, condensate collection tanks, slurry mills, filter presses and dryers. This equipment is of much smaller scale than the production equipment, so it is typically used for R&D purposes. For example a typical production tank is 2000 gallons, while a typical production tank in building T71 is only 50 gallons. Thus, the emissions generated from the Building T171 operations are much lower. There are no controls on these operations.

Insignificant Activities

All of the emission units in the T171 research and development operations are considered “insignificant activities” as defined in 326 IAC 2-7-1(21)(E).

Federal Rule Applicability

NSPS 40 CFR Part 60 Subpart Kb (New Source Performance Standard for Volatile Organic Liquid Storage Vessels) – The tanks in the T171 operations are not subject to Subpart Kb because the individual tank capacities are less than 75 cubic meters.

NSPS 40 CFR Part 60 Subpart VV (New Source Performance Standard for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry) – The storage tank in the T171 research and development operations is not subject to this rule because it stores a waste stream, which is not regulated under this rule.

NESHAP 40 CFR Part 63 Subpart GGG (National Emissions Standards for Hazardous Air Pollutants for Pharmaceuticals Production) - The emission units associated with the T171 operations are only subject to the requirements of the Pharmaceutical MACT standards when they are not serving as an R&D facility. When serving as an R&D facility, these operations are not associated with the manufacture of pharmaceutical products pursuant to 40 CFR 63.1250(a) and 63.1251.

State Rule Applicability

326 IAC 8-1-6 (VOC BACT Rule) - The storage tanks associated with the T171 equipment are not subject to 326 IAC 8-1-6 because the VOC emissions from the equipment are limited to less than 25 tons per year.

326 IAC 8-6-1 (Organic Solvent Rule) - The waste storage tanks associated with the T171 equipment are not subject to the requirements of 326 IAC 8-6-1 because the tanks were installed after January 1, 1980.

326 IAC 8-5-3 (Synthesized Pharmaceutical Manufacturing Operations) - The emission units associated with the T171 operations are not subject to the requirements of this rule because the potential to emit VOC of any facility is less than 15 pounds per day.

Compliance Requirements

The emission units associated with the T171 research and development operations are not subject to any compliance determination or compliance monitoring requirements when they are functioning as R&D facilities. When the T171 operations are not functioning as R&D facilities, they are subject to the Pharmaceutical MACT process-based annual mass limit process vent and wastewater tank standards.

D.17: BCM General Wastewater Requirements

Background and Description

The general wastewater requirements in this Title V permit section are driven by the Pharmaceutical (Pharma) MACT, MON and HON standards [40 CFR Part 63 Subparts GGG, FFFF, F and G, respectively]. There are no existing air construction approvals or other applicable air rules that regulate wastewater itself. There are regulatory requirements on equipment that handle wastewater which are addressed in the equipment sections of the Title V permit.

This section of the permit is intended to be an informational section that first defines a wastewater stream and identifies the transfer and treatment alternatives of the wastewater streams. The following information has been incorporated into the Title V permit to address the Pharma MACT, MON and HON requirements that apply to wastewater streams. When operating both a MON miscellaneous organic chemical manufacturing process unit (MCPU) under the MON and have affected wastewater streams under the Pharma MACT, Evonik may choose to comply with the MON for all such affected wastewater streams [40 CFR 63.2535(e)].

Also included in this section are alternative operating scenarios to account for scenarios in which the “new” source applicability of the Pharma MACT and/or MON are triggered.

Pharmaceutical MACT Wastewater

<u>Definition of Wastewater</u> – Wastewater is defined as any water that is discarded from a pharmaceutical manufacturing process unit (PMPU) through a single point of determination (POD) that contains an annual average concentration of partially soluble and/or soluble HAP compounds of at least 5 parts per million by weight and a load of at least 0.05 kg/yr. Wastewater does not include stormwater from segregated sewers; water from fire-fighting and deluge systems, including testing of such systems; spills; water from safety showers; samples of a size not greater than reasonably necessary for the method of analysis that is used; equipment leaks; wastewater drips from procedures such as disconnecting hoses after clearing lines; noncontact cooling water; and primary waste (waste with a net positive heating value).

Point of determination (POD) is defined as the point where a wastewater stream exits the process, storage tank, or last recovery device. If soluble and/or partially soluble HAP compounds are not recovered from water before discharge, the discharge point from the process equipment or storage tank is a POD. If water streams are routed to a recovery device, the discharge from the recovery device is a POD. There can be more than one POD per process or pharmaceutical manufacturing process unit. [40 CFR 63.1251]

<u>Definition of Affected Wastewater</u> – Affected wastewater is defined as any wastewater stream containing partially soluble HAP compounds at an annual average concentration greater than 1300 ppmw, and the total soluble and partially soluble HAP load in all wastewater from the PMPU exceeds 0.25 Mg/yr; or any wastewater stream containing partially soluble and/or soluble HAP compounds at an annual average concentration greater than 5200 ppmw, and the total soluble and partially soluble HAP load in all wastewater from the PMPU exceeds 0.25 Mg/yr. [40 CFR 63.1251, 63.1256(a)(1)(i)(A) and (B)]

Maintenance Wastewater – Maintenance wastewater is defined as wastewater generated by the draining of process fluid from components in the PMPU into an individual drain system in preparation for or during maintenance activities. Maintenance wastewater can be generated during planned and unplanned shutdowns and during periods not associated with a shutdown. Examples of activities that can generate maintenance wastewater include descaling of heat exchanger tubing bundles, cleaning of distillation column traps, draining of pumps into an individual drain system, and draining of portions of the pharmaceutical manufacturing process unit for repair. Wastewater from cleaning operations is not considered maintenance wastewater. [40 CFR 63.1251]

The Permittee shall prepare a document that is maintained at the plant site that includes a description of the maintenance procedures for management of wastewater generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., maintenance turnaround) and during periods which are not shutdowns (i.e., routine maintenance). Maintenance wastewater is not considered an affected wastewater stream. [40 CFR 63.1256(a)(4)]

Storage and Transfer of Affected Wastewater – BCM individual drain systems, storage tanks and containers may be used to store or transfer affected wastewater from the BCM operations. The regulatory requirements for these storage and transfer equipment are described in permit Sections D.8, D.10 and D.11, respectively. [40 CFR 63.1256(e), (b) and (d)]

Treatment of Affected Wastewater – The affected wastewater shall be treated using an enhanced biological treatment system, waste incinerator or an offsite treatment facility. The regulatory requirements for these treatment options are described in permit Sections D.18, D.12 and D.13, and D.19, respectively. [40 CFR 63.1256]

MON Wastewater

Definition of Wastewater – Wastewater is defined as water that is discarded from an MCPU or control device through a POD and that contains either: an annual average concentration of compounds in 40 CFR Part 63 Subpart FFFF (MON) tables 8 (partially soluble HAP) and 9 (soluble HAP) of at least 5 ppmw and has an annual average flowrate of 0.02 liters per minute or greater; or an annual average concentration of compounds in tables 8 and 9 of at least 10,000 ppmw at any flowrate. Wastewater means process wastewater or maintenance wastewater and does not include stormwater from segregated sewers; water from fire-fighting and deluge systems, including testing of such systems; spills; water from safety showers; samples of a size not greater than reasonably necessary for the method of analysis that is used; equipment leaks; wastewater drips from procedures such as disconnecting hoses after clearing lines; and noncontact cooling water.

Point of determination (POD) is defined as the point where process wastewater exits the MCPU or control device. [40 CFR 63.2550]

Definition of Group 1 Wastewater Streams at an existing or new source – A Group 1 wastewater stream is any process wastewater stream with total annual average concentration of MON Table 8 compounds greater than or equal to 10,000 ppmw at any flowrate, and the total annual load of MON Table 8 compounds greater than or equal to 200 lb/yr; or the total annual average concentration of MON Table 8 compounds greater than or equal to 1,000 ppmw, and the annual average flowrate is greater than or equal to 1 l/min; or the combined total annual average concentration of MON Tables 8 and 9 compounds greater than or equal to 30,000 ppmw and the combined total annual load of MON Tables 8 and 9 compounds greater than or equal to 1 tpy. [40 CFR 63.2485(c), 63.2550]

Maintenance Wastewater - Maintenance wastewater is defined as wastewater generated by the draining of process fluid from components in the MCPU into an individual drain system in preparation for or during maintenance activities. Maintenance wastewater can be generated during planned and unplanned shutdowns and during periods not associated with a shutdown. Examples of activities that can generate maintenance wastewater include descaling of heat exchanger tubing bundles, cleaning of distillation column traps, draining of pumps into an individual drain system, and draining of portions of the MCPU for repair. Wastewater from routine cleaning operations occurring as part of batch operations is not considered maintenance wastewater. [40 CFR 63.2550]

For maintenance wastewater containing organic HAP's listed in MON Tables 8 and 9, the Permittee shall prepare a maintenance wastewater plan that includes a description of the maintenance procedures for management of wastewater generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., maintenance turnaround) and during periods which are not shutdowns (i.e., routine maintenance) and implement this plan as part of the Startup, Shutdown, and Malfunction (SSM) Plan for maintenance wastewater as required under 40 CFR 63.6(e)(3). [40 CFR 63.2485 and Table 7, 63.105]

Storage and Transfer of Group 1 Wastewater – BCM containers, individual drain systems and storage tanks may be used to store or transfer Group 1 wastewater streams from the BCM operations. The regulatory requirements for these storage and transfer equipment are described in Sections D.11, D.8, and D.10 of this TSD. [40 CFR 63.2485 and Table 7, 63.132, 63.133, 63.135, 63.136]

Treatment of Affected Wastewater– The affected wastewater shall be treated using an enhanced biological treatment system, waste incinerator or an offsite treatment facility. The regulatory requirements for these treatment options are described in Sections D.18, D.12, D.13 and D.19 of this TSD. [40 CFR 63.2485 and Table 7]

The Group 1 wastewater streams and residuals requirements for MON wastewater incorporate by reference the wastewater requirements contained in the HON [40 CFR 63.132 through 63.148] with the exceptions provided in 63.2485(b) through (o). [63.2485(a) and MON Table 7]

HON Wastewater

Definition of Wastewater – Wastewater is defined as water that that is discarded from a chemical manufacturing process unit (CMPU) that contains either an annual average concentration of compounds in 40 CFR Part 63 Subpart F Table 9 of at least 5 ppmw and has an annual average flowrate of 0.02 liters per minute or greater; or an annual average concentration of compounds in 40 CFR Part 63 Subpart F Table 9 of at least 10,000 ppmw at any flowrate. Wastewater means process wastewater or maintenance wastewater. Wastewater does not include stormwater from segregated sewers; water from fire-fighting and deluge systems in segregated sewers, including testing of such systems; spills; and water from safety showers. [40 CFR 63.101, 63.100(f)]

Point of determination (POD) is defined as the point where process wastewater exits the CMPU or control device. [40 CFR 63.111]

Process Wastewater is defined as wastewater which, during manufacturing or processing, comes into direct contact with or results from the production of use of any raw material, intermediate product, finished product, by-product, or waste product. [40 CFR 63.101]

Group 1 Wastewater Stream at an existing HON source – A Group 1 HON wastewater stream is any process wastewater stream with total annual average concentration of HON Table 9 compounds greater than or equal to 10,000 ppmw at any flowrate; or the total annual average concentration of HON Subpart G Table 9 compounds greater than or equal to 1,000 ppmw, and the annual average flowrate is greater than or equal to 10 l/min. [40 CFR 63.111, 132(c)]

Group 1 Wastewater Streams at a new HON source – A Group 1 HON wastewater stream is any process wastewater stream with total annual average concentration of HON Subpart G Table 9 compounds greater than or equal to 10,000 ppmw at any flowrate; or the total annual average concentration of HON

Subpart G Table 9 compounds greater than or equal to 1,000 ppmw, and the annual average flowrate is greater than or equal to 10 l/min; or an annual average concentration of any individual HON Table 8 compound greater than or equal to 10 ppmw and the annual average flowrate is greater than or equal to 0.02 l/min. [40 CFR 63.111, 132(d)]

Liquid or solid organic materials with a concentration of > 10,000 ppm of Table 9 compounds from a CMPU shall not be sent to water or wastewater unless the receiving stream is treated and managed as a Group 1 wastewater stream. This provision does not apply to materials from equipment leaks, activities included in maintenance or startup/shutdown/malfunction plans, spills, or samples of a size not great than reasonable necessary for the method of analysis that is used. [63.132(f)]

<u>Maintenance Wastewater</u> – Maintenance wastewater is defined as wastewater generated by the draining of process fluid from components in the CMPU into an individual drain system prior to or during maintenance activities. Maintenance wastewater can be generated during planned and unplanned shutdowns and during periods not associated with a shutdown. [40 CFR 63.101]

For maintenance wastewater containing organic HAP's listed in HON Subpart G Table 9, the Permittee shall prepare a maintenance wastewater plan that includes a description of the maintenance procedures for management of wastewater generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., maintenance turnaround) and during periods which are not shutdowns (i.e., routine maintenance) and implement this plan as part of the Startup, Shutdown, and Malfunction (SSM) Plan for maintenance wastewater as required under 40 CFR 63.6(e)(3). [40 CFR 63.105]

BCM containers, individual drain systems and storage tanks may be used to store or transfer Group 1 HON wastewater streams from the BCM operations in accordance with the requirements of 40 CFR 63.132, 63.133, 63.135 and 63.136. Group 1 HON wastewater streams shall be treated using an enhanced biological treatment system, waste incinerator or an offsite treatment facility in accordance with 40 CFR 63.138.

BCM General Wastewater Requirements - Alternative Operating Scenarios

Pharma MACT new source applicability may be triggered if reconstruction commenced after April 2, 1997 on the Permittee's Pharma MACT-subject affected source or construction commenced after April 2, 1997 or reconstruction commenced after October 21, 1999 for a PMPU dedicated to manufacturing a single product that has the potential to emit 10 tons per year of any one HAP or 25 tons per year of combined HAP for which. [40 CFR 63.1250(b)] Reconstruction in the Pharma MACT has the meaning given in §63.2, except that "affected or previously unaffected stationary source" shall mean either "affected facility" or "PMPU." [63.1251]

Affected wastewater for a Pharma MACT new source is defined as a wastewater stream containing soluble HAP compounds at an annual average concentration greater than 110,000 ppmw, and the total soluble and partially soluble HAP load in all wastewater from the PMPU exceeds 1 Mg/yr. [40 CFR 63.1256(a)(1)]

MON new source applicability may be triggered if reconstruction commenced after April 4, 2002 on the Permittee's facilitywide collection of MCPU and heat exchange systems, wastewater, and waste management units that are associated with affected manufacturing materials [described in §63.2435(b)(1)] or construction or reconstruction of the MCPU after April 4, 2002 commenced on a dedicated MCPU that has the potential to emit 10 tons per year (tpy) of any one HAP or 25 tpy of combined HAP. For the purposes of this paragraph, an MCPU is an affected source in the definition of the term "reconstruction" in §63.2. [40 CFR 63.2440]

Group 1 Wastewater Streams at a new MON source are wastewater streams containing any process wastewater stream with an annual average concentration of any individual HON Table 8 compound greater than or equal to 10 ppmw and the annual average flowrate is greater than or equal to 0.02 l/min. [40 CFR 63.2485(c), 63.2550, 63.132(d)]

D.18: BCM Chemical Wastewater Treatment Plant

Background and Description

The BCM chemical wastewater treatment plant serves the BCM operations. The following summary has been prepared to document technical information used to prepare the Title V permit conditions and to demonstrate compliance with the Pharma MACT, MON and HON (40 CFR Part 63 Subparts GGG, FFFF, F and G, respectively).

Types of Emission Units and Pollution Control Equipment

The chemical wastewater treatment plant operations consist of a series of clarifiers and activated sludge tanks. Sludge is transferred to sludge tanks and the treated wastewater is discharged to the river.

Insignificant Activities

With the exception of the activated sludge tanks, all other emission units associated with the chemical wastewater treatment plant are considered “insignificant activities” as defined in 326 IAC 2-7-1(21)(E).

Existing Approvals

Description	Permit No.	Date
Operating Permits		
Title V permit	T157-6879-00006	Issued February 27, 2004
Title V Permit Renewal	T157-26575-00006	Issued October 6, 2009

Federal Rule Applicability

<u>40 CFR Part 63 Subpart GGG – Pharmaceutical MACT [40 CFR 63.1256]</u>
The BCM enhanced biological treatment components (activated sludge tanks) of the BCM chemical wastewater treatment plant may be used to treat affected wastewater streams except for mixed wastewater streams greater than 5200 ppmw, where the partially soluble HAP component is equal to or greater than 50 ppmw or wastewater streams containing combined partially soluble HAPs greater than 1300 ppmw.

To demonstrate compliance with the enhanced biological treatment system, the Permittee shall maintain a minimum mixed liquor volatile suspended solids concentration of 1 kg/cubic meter (942 mg/l) of the mixed liquor in the enhanced biological treatment system.
When operating both an MCPU under the MON and have affected wastewater streams under the Pharma MACT, Evonik may choose to comply with the MON for all such affected wastewater streams [40 CFR 63.2535(e)].

<u>40 CFR Part 63 Subpart DD – Offsite Waste and Recovery (OSWR) MACT [40 CFR 63.683(b)]</u>
Tippecanoe Laboratories treats liquid waste streams produced from pharmaceuticals production as well as from off-site waste recovery. The OSWR MACT includes provisions that allow Tippecanoe Laboratories to send the liquid waste streams from off-site waste recovery to the wastewater treatment

plant for treatment with no additional testing or monitoring requirements as long as the wastewater treatment plant is also subject to another subpart under 40 CFR part 63.

The OSWR MACT provision allowing the use of the wastewater treatment plant as the final treatment step for the off-site waste material (pertinent sections in red text) is included in 40 CFR 63.683(b)(1) and (b)(2). These references are incorporated into Condition D.18.1.

<u>40 CFR 63, Subpart FFFF– MON [40 CFR 63.2485 and Table 7, 63.138(g)(2), 63.145(g), 145(h)(1)]</u>
The BCM enhanced biological treatment components (activated sludge tanks) of the BCM chemical wastewater treatment plant may be used to treat Group 1 MON wastewater streams and is exempt from the performance testing requirements if at least 99% by weight of all compounds in HON (40 CFR Part 63 Subpart G) Table 36 present in the aggregate wastewater stream are on List 1 of HON (40 CFR Part 63 Subpart G) Subpart G Table 36.

To demonstrate compliance with the enhanced biological treatment system, the Permittee shall maintain a minimum mixed liquor volatile suspended solids concentration of 1 kg/cubic meter (942 mg/l) of the mixed liquor in the enhanced biological treatment system. [40 CFR 63.111]

<u>40 CFR 63, Subparts F and G – HON [40 CFR 63.138(g)(2), 63.145(g), 145(h)(1)]</u>
The BCM enhanced biological treatment components (activated sludge tanks) of the BCM chemical wastewater treatment plant may be used to treat Group 1 HON wastewater streams and is exempt from the performance testing requirements if at least 99% by weight of all compounds in HON Table 36 present in the aggregate wastewater stream are on List 1 of HON Subpart G Table 36.

To demonstrate compliance with the enhanced biological treatment system, the Permittee shall maintain a minimum mixed liquor volatile suspended solids concentration of 1 kg/cubic meter (942 mg/l) of the mixed liquor in the enhanced biological treatment system. [40 CFR 63.111]

State Rule Applicability

<u>326 IAC 8-1-6 (VOC BACT Rule)</u> – The BCM chemical wastewater treatment plant is not subject to 326 IAC 8-1-6 because the potential VOC emissions from the facility are less than 25 tons per year.

Compliance Requirements

The BCM enhanced biological treatment components (activated sludge tanks) of the BCM chemical wastewater treatment plant shall measure the total suspended solids (TSS), chemical oxygen demand (COD), and biomass concentration at least once per week and record the weekly average data to demonstrate compliance with the Pharmaceutical MACT and MON requirements in accordance with 40 CFR 63.1258(g)(2), 40 CFR 63.2485 and Table 7, and 40 CFR 63.143.

D.19: BCM Transfer of Affected Wastewater & Group 1 Wastewater for Offsite Treatment

Background and Description

The requirements for the transfer of affected/Group 1 wastewater for offsite treatment are driven by the Pharmaceutical MACT and MON standards. As with many other MON wastewater requirements, the MON references the HON regarding transfer of Group 1 wastewater for offsite treatment. There are no existing air construction approvals or other applicable air rules that regulate these transfer activities. The transfer of affected wastewater for offsite treatment relates to either the shipment of affected wastewater generated onsite to an offsite treatment facility or receipt of an offsite affected wastewater to be treated onsite.

This section of the permit is intended to be an informational section that defines a wastewater stream and identifies the transfer and treatment alternatives of the wastewater streams. The following information has been incorporated into the Title V permit to address the Pharmaceutical MACT and MON [requirements that apply to these transfer activities. When operating both an MCPU under the MON and have affected wastewater streams under the Pharmaceutical MACT, Evonik may choose to comply with the MON for all such affected wastewater streams [40 CFR 63.2535(e)].

Federal Rule Applicability

40 CFR Part 63 Subpart GGG – Pharmaceutical MACT [40 CFR 63.1256]
Pursuant to the Pharmaceutical MACT standards for wastewater [40 CFR 63.1256(a)(5)(i)(B)], the Permittee shall include a notice with each shipment of affected wastewater or residual removed from affected wastewater to an offsite treatment facility. The notice shall state that the affected wastewater or residual contains organic HAP and must be treated in accordance with the treatment requirements of the Pharmaceutical MACT standards. When the transport is continuous or ongoing, the notice shall be submitted to the treatment operator initially and whenever there is a change in the required treatment.

The Permittee shall not transfer the affected wastewater or residual unless the transferee has submitted to the EPA a written certification that the transferee will manage and treat any affected wastewater or residual removed from affected wastewater received from a source subject to the requirements of this subpart in accordance with the treatment requirements of the Pharmaceutical MACT standards.

Where the Permittee is the transferee, the Permittee shall submit to EPA a written certification signed by the responsible official that it will manage and treat any affected wastewater or residual removed from affected wastewater received from a source subject to the requirements of this subpart in accordance with the treatment requirements of the Pharmaceutical MACT standards for wastewater [40 CFR 63.1256(a)(5)(ii), (iv), and (v)]. The Permittee may revoke its certification as allowed under 40 CFR 63.1256(a)(5)(iii) and (v).

40 CFR Part 63, Subpart FFFF– MON [40 CFR 63.2 Table 7, 40 CFR 63.132(g)] and 40 CFR Part 63 Subparts F and G
Pursuant to the MON and HON standards for wastewater, the Permittee shall include a notice with each shipment of Group 1 wastewater streams or residual removed from Group 1 wastewater streams to an offsite treatment facility. The notice shall state that the Group 1 wastewater or residual contains organic HAP and must be treated in accordance with the treatment requirements of the HON standards. When the transport is continuous or ongoing, the notice shall be submitted to the treatment operator initially and whenever there is a change in the required treatment.

The Permittee shall not transfer the Group 1 wastewater or residual unless the transferee has submitted to the EPA a written certification that the transferee will manage and treat any affected wastewater or residual removed from affected wastewater received from a source subject to the requirements of this subpart in accordance with the treatment requirements of either 40 CFR 63.133 through 63.147 or 63.102(b) of Subpart F, or Part 63 Subpart D if alternative emission limitations have been granted the transferor in accordance with those provisions.

The MON also provides in 40 CFR 63.2485(i) that if the Permittee ships MON wastewater to an offsite treatment facility that meets the requirements on 63.138(h) [Treatment in RCRA Unit], that the Permittee may document in the notification of compliance status report that the wastewater will be treated as hazardous waste at a facility meeting 63.138(h) as an alternative to having the offsite facility submit the written certification in 63.132(g)(2).

Where the Permittee is the transferee, the Permittee shall submit to EPA a written certification signed by the responsible official that it will manage and treat any Group 1 wastewater or residual removed from affected wastewater received from a source subject to the requirements of 40 CFR Part 63 Subpart FFFF in accordance with the treatment requirements 40 CFR Part 63 Subpart FFFF [40 CFR 63.2485, 40 CFR 63.132(g)(2), (3), and (4)]. The Permittee may revoke its certification as allowed under 40 CFR 63.132(g)(2).

D.20: BCM Support – Transfer Rack Operations

Background and Description

The BCM Support Transfer Racks serve the BCM operations and BCM Support Operations at Tippecanoe Laboratories for loading tanker trailers with organic liquids containing HAP(s). There is one transfer rack at building T146 that is vented to the RTO system and two at Building T19 that are vented to the T79 system. All other stations at the T146 and T19 buildings are used to unload materials into storage tanks; emissions from these activities are covered in the Sections D.8 (Waste Tank Conditions) and D.9 (Solvent Storage Conditions) of the permit. Transfer racks supporting Fermented Products operations are outside the scope of this section, because any loading racks in the FP area do not serve miscellaneous chemical manufacturing process units or chemical manufacturing process units.

Types of Emission Units and Pollution Control Equipment

There is one transfer rack at building T146 that is vented to the RTO system and two at Building T19 that are vented to the T79 system.

Insignificant Activities

The loading racks are not considered an insignificant activity pursuant to 326 IAC 2-7-1(21).

Federal Rule Applicability

BCM Support Loading Racks are subject to 40 CFR Part 63 Subpart FFFF, Miscellaneous Organic Chemical Manufacturing NESHAP (MON) when used to load HAP associated with a miscellaneous organic chemical manufacturing process unit (MCPU) and the NESHAP from the Synthetic Organic Chemical Manufacturing Industry (herein referred to as the HON), 40 CFR Part 63 Subpart F (which incorporates Subparts G and H by reference) when used to load organic HAP associated with a chemical manufacturing process unit (CMPU).

The MON requires controls for a Group 1 transfer rack, which is a transfer rack that loads more than 0.65 million liters/year of liquids that contain organic HAP with a rack-weighted average partial pressure >1.5 pound per square inch absolute, as defined in 40 CFR 63.2550(i). The HON similarly defines a Group 1 transfer rack in 40 CFR 63.111 as a transfer rack that annually loads ≥ 0.65 million liters of liquid products that contain organic HAP with rack weighted average vapor pressure ≥10.3 kPa.

State Rule Applicability

There are no state rules that apply to the transfer racks.

Testing and Compliance Requirements

The testing and compliance requirements for BCM Support Transfer Racks are described in the RTO (Section D.14) and T79 (Section D.15) streamlining tables.

Multiple Requirement Streamlining and BACT Determination

Both the MON and the HON require Group 1 transfer racks to be vented to a control device. Both regulations provide for a combined stream provision such that when transfer rack emissions are combined with other regulated vent streams (e.g., MON/HON process vent or storage tank emissions), the Permittee may demonstrate compliance with the transfer rack standards by demonstrating compliance with the standards for the other vent stream (e.g., MON transfer racks may demonstrate compliance by following the MON process vent standards). Thus, the control device standards for a transfer rack vented to the RTO are described in Section D.6.1(a) (which in turn references Section D.14), and the control device standards for a transfer rack vented to T79 are described in Section D.7.1(a) (which in turn references Section D.15).

BCM Operations – Alternative Operating Scenarios

Because the MON HX standards differ from the Pharma MACT, and Evonik may or may not generate halogenated Group 1 process vents subject to the MON, Evonik is including an alternative operating scenario to account for the potential generation of a MON halogenated Group 1 process vent. The control requirements for such process vents are described in the RTO Operations section of the permit.

The HON only requires controls on continuous Group 1 process vents (generated from the manufacture of a HON-subject chemical). Currently, Evonik only operates batch process vents. However, Evonik is including an alternative operating scenario to account for the possibility that the site could generate a HON Group 1 process vent. The control requirements for such process vents are described in the RTO Operations section of the permit.

As described in the BCM Operations section of the permit, Evonik is including an alternative operating scenario to account for the potential generation of a MON halogenated Group 1 transfer rack or HON Group 1 transfer rack or halogenated transfer rack that is vented to the RTO (i.e., the T146 transfer rack). These operating scenarios are described in Condition D.6.10, which states that the control requirements for these operating scenarios are described in the RTO Operations section of the permit (D.14).

D.21: Cold Cleaner Degreasers

Background and Description

This section provides specific requirements for cold cleaning organic solvent degreasing operations constructed after January 1, 1990 at the site which are defined as insignificant activities pursuant to 326 IAC 2-7-1(21)(G)(vi)(CC).

Types of Emission Units and Pollution Control Equipment

Cold cleaning organic solvent degreasing operations that do not exceed 145 gallons of solvent usage per 12 months, except if subject to 326 IAC 20-6.

Federal Rule Applicability

There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for the cold cleaner degreasers.

This source is still not subject to the National Emission Standards for Hazardous Air Pollutants for Halogenated Solvent Cleaning, (40 CFR 63.460, Subpart T), since the cold cleaner degreasers are not "in-line" as defined in section 63.461 and they do not use halogenated solvents.

State Rule Applicability

326 IAC 8-3-2 (Cold Cleaner Degreasers)

(a) Pursuant to 326 IAC 8-3-1(c)(2)(A)(ii), the cold cleaner degreasers without remote solvent reservoirs are subject to the requirements of 326 IAC 8-3-2 since they were constructed after July 1, 1990 and are located anywhere in the state. The Permittee shall ensure that the following control equipment and operating requirements are met:

(1) Equip the degreaser with a cover.

(2) Equip the degreaser with a device for draining cleaned parts.

(3) Close the degreaser cover whenever parts are not being handled in the degreaser.

(4) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases.

(5) Provide a permanent, conspicuous label that lists the operating requirements in subdivisions (3), (4), (6), and (7).

(6) Store waste solvent only in closed containers.

(7) Prohibit the disposal or transfer of waste solvent in such a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

(b) The owner or operator of a cold cleaner degreaser subject to this subsection shall ensure the following additional control equipment and operating requirements are met:

(1) Equip the degreaser with one (1) of the following control devices if the solvent is heated to a temperature of greater than forty-eight and nine-tenths (48.9) degrees Celsius (one hundred twenty (120) degrees Fahrenheit):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.

(B) A water cover when solvent used is insoluble in, and heavier than, water.

(C) A refrigerated chiller.

(D) Carbon adsorption.

(E) An alternative system of demonstrated equivalent or better control as those outlined in clauses (A) through (D) that is approved by the department. An alternative system shall be submitted to the U.S. EPA as a SIP revision.

(2) Ensure the degreaser cover is designed so that it can be easily operated with one (1) hand if the solvent is agitated or heated.

(3) If used, solvent spray:

(A) must be a solid, fluid stream; and

(B) shall be applied at a pressure that does not cause excessive splashing.

326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers)
Pursuant to 326 IAC 8-3-8(a)(2), the cold cleaner degreasers are subject to the requirements of 326 IAC 8-3-8, since the units are located anywhere in the state. The Permittee shall comply with the following:

(a) No person shall cause or allow the sale of solvents for use in cold cleaner degreasing operations with a VOC composite partial vapor pressure, when diluted at the manufacturer's recommended blend and dilution, that exceeds on (1) millimeter of mercury (nineteen-thousandths (0.019) pound per square inch) measured at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit) in an amount greater than five (5) gallons during any seven (7) consecutive days to an individual or business.

(b) No person shall operate a cold cleaner degreaser with a solvent that has a VOC composite partial vapor pressure that exceeds one (1) millimeter of mercury (nineteen-thousandths (0.019) pound per square inch) measured at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

(c) Record keeping requirements are as follows:

(1) All persons subject to the requirements of subsection (b)(1) shall maintain all of the following records for each sale:

(A) The name and address of the solvent purchaser.

(B) The date of sale (or invoice/bill date of contract servicer indicating service date).

(C) The type of solvent sold.

(D) The volume of each unit of solvent sold.

(E) The total volume of the solvent sold.

(F) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

(2) All persons subject to the requirements of subsection (b)(2) shall maintain each of the following records for each purchase:

(A) The name and address of the solvent supplier.

(B) The date of purchase (or invoice/bill date of contract servicer indicating service date).

(C) The type of solvent purchased.

(D) The total volume of the solvent purchased.

(E) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

(d) All records required by subsection (c) shall be:

(1) retained on site or accessible electronically from the site for the most recent three (3) year period; and

(2) reasonably accessible for an additional two (2) year period.

Compliance Requirements

There are no compliance requirements for the cold cleaner degreasers.

D.22: Architectural and Industrial Maintenance Coatings Conditions

Background and Description

This section pertains to the Architectural and Industrial Maintenance Coating conditions listed in 326 IAC 8-14.

Types of Emission Units and Control Devices

This condition applies to the entire source.

Federal Rule Applicability

There are no Federal rule applicabilities subject to this section.

State Rule Applicability

326 IAC 8-14 (Architectural and Industrial Maintenance (AIM) Coatings)
The entire source is subject to the provisions of 326 IAC 8-14 (Architectural and Industrial Maintenance (AIM) Coatings) since the source supplies, sells, offers for sale, and manufacturers AIM coatings for use within the state of Indiana. Pursuant to 326 IAC 8-14, the Permittee shall comply with the following:

(a) The Permittee shall comply with the standards for AIM coatings according to 326 IAC 8-14-3.

(b) The Permittee shall comply with the following work practices:

(1) All AIM coatings containers used to apply the contents therein to a surface directly from the container by any of the following shall be closed when not in use:

(A) pouring;
(B) siphoning;
(C) brushing;
(D) rolling;
(E) padding;
(F) ragging; or
(G) other means;

(2) Containers of any VOC-containing materials used for thinning and cleanup shall be closed when not in use.

Compliance Requirements

There are no compliance requirements applicable to this section.

Section E: LDAR Program

Background and Description

Bulk chemical manufacturing (BCM) volatile organic hazardous air pollutant and/or volatile organic compound (VOHAP/VOC) emissions occur either as point source emissions or as fugitive emissions. Fugitive emissions occur primarily from small leaks in piping systems, including pumps, valves, open-ended valves or lines, connectors, instrumentation systems, and closed vent systems. Fugitive emissions occur in such a way as to render it difficult or impossible to duct them except as a very low concentration portion of the general ventilation system. This characteristic of extremely low VOC concentration at a high gas flow rate means that the use of add-on control equipment is nearly always prohibitively expensive, and often technologically futile.

Two basic approaches are used to minimize fugitive VOHAP/VOC emissions from industrial process equipment and its associated supply and waste treatment systems. Both approaches are included in regulated leak detection and repair (LDAR) programs. Such programs represent Best Available Control Technology (BACT) for sources of fugitive VOC emissions.

The first approach is to use design specifications and work practices to reduce leaks in solvent areas. For example, closed purge sampling systems are used, open pipe ends are capped or blinded, and rupture disks replace pressure relief valves.

The second approach is to implement an LDAR program. An LDAR program includes:

1. Identifying the equipment components;
2. Monitoring of components for VOHAP/VOC emissions using a defined test method(s);
3. Defining the frequency for monitoring components;
4. Repairing or replacing leaking components; and
5. Maintaining records of the tests, results, and repairs.

Section E of the permit identifies the LDAR and other fugitive emission control requirements for leaks involving VOHAP/VOC at Tippecanoe Laboratories. Section E.1 of the permit includes the requirements for equipment leaks associated with "BCM Process Systems," and section E.2 includes the requirements for equipment leaks associated with "BCM Waste Systems."

Types of Emission Units and Pollution Control Equipment

Fugitive VOHAP/VOC emissions occur throughout the bulk chemical manufacturing (BCM) facilities. Fugitive emissions can be expected from several components of the solvent/solvent waste distribution and handling systems, including pumps, valves and connectors. LDAR programs are the most widely used systems to control fugitive emissions from these components.

Insignificant Activities

While individual components of piping systems that cause fugitive VOHAP/VOC emissions have low enough emissions to be classified as insignificant activities, this permit looks at such emissions in their entirety. On that basis, they are not classified as insignificant activities.

Federal Rule Applicability

The fugitive VOHAP/VOC emissions in BCM areas are subject to the four federal Clean Air Act LDAR requirements listed below. These requirements are described in greater detail in the "Multiple Requirement Streamlining Proposal and BACT Determination" topic within this section.

Applicable federal LDAR requirements:

10. 40 CFR 63.1255, Pharmaceutical Production (Pharma) MACT
11. 40 CFR 63.2480, Miscellaneous Organic Chemical Manufacturing NESHAP (MON)
12. 40 CFR 63.691, Off-site Waste and Recovery Operations (OSWRO) MACT
13. 40 CFR Part 63 Subpart I, the Negotiated Regulation for Equipment Leaks

An alternative operating scenario is described below for production of such processes that trigger applicability of the National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry (herein referred to as the HON), 40 CFR Part 63 Subpart F (which incorporates Subparts G and H by reference).

State Rule Applicability

The fugitive VOHAP/VOC emissions in BCM areas are subject to the two state fugitive emission control requirements listed below. These requirements are described in greater detail in the "Multiple Requirement Streamlining Proposal and BACT Determination" topic within this section.

Applicable state LDAR requirements:

1. Synthesized pharmaceutical manufacturing rule [326 IAC 8-5-3]
2. PSD Best Available Control Technology (BACT) Requirements [326 IAC 2-2]

Compliance Requirements

An LDAR program does not employ any compliance requirements beyond the inspections and monitoring within the program itself.

Multiple Requirement Streamlining and BACT Determination

As described in the "Background and Description" topic above, Section E.1 of the permit includes the requirements for equipment leaks associated with "BCM Process Systems," and section E.2 includes the requirements for equipment leaks associated with "BCM Waste Systems." The "BCM Process Systems" include components in process service up to the Pharma MACT, HON, or MON points of determination (POD). (Note that the RCRA point of generation, or POG, and Pharma MACT/MON POD coincide where both exist on a given stream.) The "BCM Waste Systems" consist of all components after the POGs or POD. The streamlining associated with Sections E.1 and E.2 of the permit is described below.

LDAR Program for BCM Process Systems

The requirements of the Pharma MACT are applied to equipment leaks associated with "BCM Process Systems". The basis for this is that the Pharma MACT provides that a source may comply with the 40 CRR Part 63 Subpart I requirements by complying with the Pharma MACT LDAR requirements [40 CFR 63.1250(h)(4)]. The MON also provides that if the affected source has LDAR equipment subject to the Pharma MACT and the MON that the source may elect to comply with the provisions of the Pharma MACT [40 CFR 63.2535(d)]. The equipment in the BCM areas is currently subject to the Pharma MACT. Furthermore, all existing equipment and any new equipment added to the BCM areas is expected to be non-dedicated (i.e., will be used for both pharmaceutical and miscellaneous organic chemical processes). Tippecanoe Laboratories will utilize the provisions in 40 CFR 63.1250(h)(4) and 63.2535(d) and follow the Pharma MACT LDAR requirements to meet the Pharma MACT, Subpart I and MON LDAR requirements for components associated with the "BCM Process Systems." As described in the "Background and Description" topic above, the work practice and LDAR program requirements contained in the applicable federal LDAR requirements constitute BACT. Additionally, the applicable federal LDAR requirements are more stringent than the state LDAR requirements; therefore, compliance with federal LDAR requirements satisfies the applicable state LDAR requirements.

As with all other LDAR programs, the Pharma MACT LDAR program includes both design specifications and periodic monitoring. Regardless of whether a component complies by design or by periodic monitoring, if it is observed to be leaking at any time it must be repaired. In general, a source must make an initial repair attempt within 5 days after observing the leak and to complete the repair within 15 days of discovery. Repair may be delayed if the component is taken out of service, or if other requirements are met. Each delay of repair must be reported in the periodic report. This also satisfies the requirements of 326 IAC 8-5-3 to repair visible leaks of VOC.

The Pharma MACT LDAR program also provides for the use of an alternative means of emission limitation for all processes and for supply lines between storage and processing areas. The specifications are found at 40 CFR 63.178. This alternative allows an owner or operator to use pressure, vacuum, or liquid testing to demonstrate compliance with all applicable LDAR requirements. Although not everything can physically be pressure, vacuum, or liquid tested, Tippecanoe Labs complies through the use of this alternative in many of the processing areas in the plant. The necessary permit conditions for this alternative are as explained in 40 CFR 63.178.

Table 1 summarizes the requirements for the "BCM Process System" components.

LDAR Program for BCM Process Systems – Alternative Operating Scenarios

In the event that equipment is added to the BCM area or existing equipment changes service such that the equipment is dedicated to a miscellaneous organic chemical manufacturing process unit (MCPU) and is not part of a pharmaceutical manufacturing process unit (PMPU), the overlap provision in 40 CFR 63.2535(d) is no longer applicable. Therefore, Evonik proposes to follow an Alternative Operating Scenario that applies the MON equipment leak requirements in 40 CFR 63.2480 and the requirements of either 40 CFR Part 63 Subpart H (HON), 40 CFR Part 63 Subpart UU or 40 CFR Part 65 Subpart F (those regulations referenced in the MON) to the MON-dedicated equipment. If the MCPU meets the definition of a "new affected source" in 40 CFR 63.2440(c), the requirements of 40 CFR Part 63 Subpart H may not be used to meet the MON equipment leak requirements.

Because Tippecanoe Laboratories is a flexible production facility, production of a HON process is possible. If such an occasion arises in which equipment is added to a HON process, Tippecanoe Laboratories will follow the alternative operating scenario described in the permit and institute the equipment leak requirements in 40 CFR Part 63 Subpart H (HON) for the equipment associated with the HON process.

LDAR Program for BCM Waste Systems

The Pharma MACT LDAR requirements at 40 CFR 63.1255 apply to process vents and storage tanks under the Pharma MACT rule, but, like the Hazardous Organic NESHAP (HON) from which it is derived, the LDAR program does not include wastewaters. Thus, equipment leaks associated with BCM wastewaters are included in the "BCM Waste Systems." The requirements of 40 CFR Part 61 Subpart V, the National Emission Standard for Equipment Leaks, are applied to equipment leaks associated with "BCM Process Systems". The basis for this is that the OSWRO MACT provides in 40 CFR 63.691(b)(1) that a source may comply with the OSWRO MACT LDAR requirements by complying with 40 CFR Part 61 Subpart V. While the OSWRO MACT applies only to equipment that receives off-site material as defined in that rule, Tippecanoe Laboratories applies 40 CFR Part 61 Subpart V to all components in "BCM Waste Systems" to satisfy PSD BACT requirements.

As with all other LDAR programs, Subpart V includes both design specifications and periodic monitoring. Regardless of whether a component complies by design or undergoes periodic monitoring, if it is observed to be leaking at any time it must be repaired. In general, a source must make an initial repair attempt within 5 days after observing the leak and complete the repair within 15 days of discovery. Repair may be delayed if the component is taken out of service, or if other requirements are met. For example, if repair parts are not available on site but are promptly ordered, delay of repair may be justifiable. Each delay of repair must be reported in the periodic report. This also satisfies the requirements of 326 IAC 8-5-3 to repair visible leaks of VOC.

Table 2 summarizes the requirements for the "BCM Waste System" components.

Table 1: Summary of LDAR Program for BCM Process Systems

Regulation Overlap Provisions: 40 CFR 63.1250(h)(4) – Provision to follow Pharma MACT LDAR to meet 40 CFR Part 63 Subpart I LDAR
40 CFR 63.2535(d) – Provision to follow Pharma MACT LDAR to meet 40 CFR Part 63 Subpart FFFF (MON) LDAR

Definitions: *In VOC/VHAP Service* means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight a volatile hazardous air pollutant (VHAP). [40 CFR 63.1251]
Connector means flanged, screwed or other joined fittings used to connect two pipelines or a pipeline and a piece of equipment. For purposes of reporting and recordkeeping, connector means joined fittings not inaccessible ceramic or ceramic lined. [40 CFR 63.1251]
In vacuum service means that equipment is operating at an internal pressure which is at least 5 kPa below ambient pressure. [40 CFR 63.1251]
Monitor means to measure by the methods described at 40 CFR 63.180(b) and applies to this table only.
Repaired means that equipment is adjusted to eliminate a leak as defined in the applicable paragraphs of 40 CFR 63.1255, and monitored as specified in 40 CFR 63.180(b) and (c), or 63.180(f) or (g), as appropriate, to verify that the emissions from the equipment is below the applicable leak definition. 40 CFR 63.1251

Component Types	Standards	Leak Definition	Repair	Exemptions
Design Specifications:				
Pressure Relief Devices in Gas/Vapor Service [40 CFR 63.165]	• Operated with no detectable emissions [40 CFR 63.165(a)] or • Rupture disk [40 CFR 63.165(d)(1)] or • Equipped with closed vent system [40 CFR 63.165(c)]	• No detectable emissions (less than 500 ppm above background) [40 CFR 63.165(a)&(b)] • N/A for rupture disk and closed vent system [40 CFR 63.165(c), (d)(2)	• No Rupture Disk: After each release, return to no detectable emissions, measured by monitoring, within 5 calendar days [40 CFR 63.165(b)(1)] • Rupture Disk: After each release, replace rupture disk within 5 calendar days [40 CFR 63.165(d)(2)]	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.1255(a)(1)] • Equipment in vacuum service [40 CFR 63.1255(a)(8)]
Compressors [40 CFR 63.164]	• Either use a seal with barrier fluid system inspected daily or alarmed [40 CFR 63.164(a)-(e)] or • Equip with a closed-vent system to capture & transport compressor drive shaft seal back to a process, a fuel gas system, or a control device meeting 40 CFR 63.172 [40 CFR 63.164(h)] or • Use leakless design that is < 500 ppmv monitored annually [40 CFR 63.164(i)]	• Sensor indicates failure of seal system, barrier fluid system, or both based on established criterion [40 CFR 63.164(f)] or • leakless design $\geq$ 500 ppmv [40 CFR 63.164(i)(2)] or • N/A for closed vent system alternative	• Initial repair attempt no later than 5 calendar days after detecting the leak, and final repair no later than 15 calendar days after detecting the leak. [40 CFR 63.164(g)(1) & (2)] • N/A for closed vent system and leakless design alternative	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.1255(a)(1)] • Equipment in vacuum service [40 CFR 63.1255(a)(8)]

Component Types	Standards	Leak Definition	Repair	Exemptions
Design Specifications:				
Sampling Connection Systems [40 CFR 63.166]	• Use a closed purge or closed vent system that either returns the fluid to the process or collects and recycles the purged fluid [40 CFR 63.166(b)(1) & (2)] or • Captures and transports all purged fluids to a compliant control device [40 CFR 63.166(b)(3)] or • Collects, stores and transports the purged process fluid to an appropriate waste management system or facility, such as a RCRA TSD [40 CFR 63.166(b)(4)] *Gases displaced during filling of samples are not required to be collected or captured [40 CFR 63.166(a)]	N/A	N/A	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.1255(a)(1)] • Equipment in vacuum service [40 CFR 63.1255(a)(8)] • In-situ sampling systems and sampling systems without purges [40 CFR 63.166(c)]
Open-Ended Valves or Lines [40 CFR 63.1255(d)]	• Equip with cap, blind flange, plug or second valve to seal open end at all times, except when operations requires flow through open end or during maintenance and repair [40 CFR 63.1255(d)(1)(ii)] • Closure must be in place within one hour after the end of allowed activities. No record is required. [40 CFR 63.1255(d)(1)(ii)] • Second valves: Must close valve on process fluid and prior to closing second valve [40 CFR 63.1255(d)(2)] • Double Block and Bleed System: May remain open during operations that require venting the line between the block valves [40 CFR 63.1255(d)(3)]	N/A	N/A	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.1255(a)(1)] • Equipment in vacuum service [40 CFR 63.1255(a)(8)] • Open ended valves and lines, in an emergency shutdown system, that are designed to open automatically in the event of a process upset. Certain other open ended valves or lines that would create a safety hazard if closed. [40 CFR 63.1255(d)(4)-(6)]

Component Types	Standards	Leak Definition	Repair	Exemptions
Periodic Monitoring:				
Valves in Gas/Vapor Service and Light Liquid Service [40 CFR 63.1255(e)]	• Complete initial monitoring survey by 10/21/03, or within 1 year after compliance date [40 CFR 63.1255(e)(2)] • Subsequently monitor at a frequency determined by % leakers calculated per the equation in the rule. Frequencies range from monthly to every 2 years. [40 CFR 63.1255(e)(4)(1)-(v)] • Valves may be assigned to subgroups, as long as the percent leakers in the subgroup remains at less than 2 percent, and may be reassigned under certain conditions [40 CFR 63.1255(e)(5)]	500 ppm [40 CFR 63.1255(e)(3)(ii)]	• Initial repair attempt no later than 5 calendar days after detecting the leak, and final repair no later than 15 calendar days after detecting the leak [40 CFR 63.1255(e)(7)(i) & (ii)] and • Re-monitor the valve within 3 months after repair [40 CFR 63.1255(e)(7)(iii)]	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.1255(a)(1)] • Equipment in vacuum service [40 CFR 63.1255(a)(8)] • Unsafe to monitor and difficult to monitor: See section on unsafe, difficult, and inaccessible components below.
Pumps in Light Liquid Service [40 CFR 63.1255(c)]	• Monitor quarterly and visually inspect weekly. If weekly visual inspection indicates liquid dripping from the seal, either eliminate the liquid dripping or monitor prior to the next weekly visual inspection. If the greater of 10% or 3 of the pumps in a group of processes leak on a 1year rolling average, then must monitor monthly [40 CFR 63.1255(c)(2)(iii) & (c)(4)(ii)] • No monitoring or visual inspections required for pumps designed with no external actuated shaft penetrating the housing [40 CFR 63.1255(c)(6)] • No monitoring required for dual mechanical seal pumps, with specific design requirements, including a barrier fluid system, with weekly visual inspections. If weekly visual inspection indicates liquid dripping from the seal, either eliminate the liquid dripping or monitor prior to the next weekly visual inspection. Equip barrier fluid system with sensor to detect seal system failure and either observe sensor daily or equip with alarm. [40 CFR 63.1255(c)(5)(iv)] • No monitoring required for pumps equipped with closed vent system that ducts either to a control device or back to the process. [40 CFR 63.1255(c)(7)]	• 2,000 ppmv [40 CFR 63.1255(c)(2)(ii)(B)] • Dual mechanical seal: If visual indication of liquids dripping exceeds established criteria, or sensor indicates leak [40 CFR 63.1255(c)(5)(vi)]	Initial repair attempt no later than 5 calendar days after detecting the leak, and final repair no later than 15 calendar days after detecting the leak [40 CFR 63.1255(c)(3)]	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.1255(a)(1)] • Equipment in vacuum service [40 CFR 63.1255(a)(8)] • If more than 90% of the pumps in a group of processes are either dual mechanical seal or no external actuated shaft, then no periodic monitoring is required [40 CFR 63.1255(c)(9)] • Unsafe to monitor and difficult to monitor: See section on unsafe, difficult, and inaccessible components below.

Component Types	Standards	Leak Definition	Repair	Exemptions
Periodic Monitoring:				
Connectors in Gas/Vapor Service or Light Liquid Service [40 CFR 63.1255(b)(4)(iii) and 40 CFR 63.174]	• Complete initial monitoring survey by 10/21/03, or one year after compliance date [40 CFR 63.1255(b)(4)(iii) & 40 CFR 63.174 (b)] • Subsequently monitor at a frequency determined by % leakers calculated per the equation in the rule. Frequencies range from once a year to once every 8 years. [40 CFR 63.1255(b)(4)(iii)] • The number of non-repairable connectors are set to zero; thus opened connectors are not required to be monitored within 3 months of being returned to service [40 CFR 63.174(c)(2)] • Screwed connectors will comply as ordinary connectors; the alternative at 40 CFR 64.174(c)(2) will not be used.	500 ppm [40 CFR 63.174(a)(1)]	Initial repair attempt no later than 5 calendar days after detecting the leak, and final repair no later than 15 calendar days after detecting the leak. [40 CFR 63.174(d)]	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.1255(a)(1)] • Equipment in vacuum service [40 CFR 63.1255(a)(8)] • Inaccessible, unsafe to monitor: ceramic or ceramic-lined connectors: See section on unsafe, difficult, and inaccessible components below.
Agitators in Gas/Vapor Service or Light Liquid Service 40 CFR 63.1255(c)	• Monitor quarterly and visually inspect weekly. If weekly visual inspection indicates liquid dripping from the seal, either eliminate the liquid dripping or monitor prior to the next weekly visual inspection. [40 CFR 63.1255(c)(2)(1)(iii)] • No monitoring or visual inspections required for agitators designed with no external actuated shaft penetrating the housing [40 CFR 63.1255(c)(6)] • No periodic monitoring required for dual mechanical seal agitators, with specific design requirements, including a barrier fluid system, with weekly visual inspections. If weekly visual inspection indicates liquid dripping from the seal, either eliminate the liquid dripping or monitor prior to the next weekly visual inspection. Equip barrier fluid system with sensor to detect seal system failure and either observe sensor daily or equip with alarm. [40 CFR 63.1255(c)(5)(iv)] • No monitoring required for agitators equipped with closed vent system that ducts either to a control device or back to the process. [40 CFR 63.1255(c)(7)]	• 10,000 ppm [40 CFR 63.1255(c)(2)(ii)(A)] • Dual mechanical seal: If visual indication of liquids dripping exceeds established criteria, or sensor indicates leak. [40 CFR 63.1255(c)(5)(vi)]	Initial repair attempt no later than 5 calendar days after detecting the leak, and final repair no later than 15 calendar days after detecting the leak. [40 CFR 63.1255(c)(3)]	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.1255(a)(1)] • Equipment in vacuum service [40 CFR 63.1255(a)(8)] • Unsafe to monitor and difficult to monitor: See section on unsafe, difficult, and inaccessible components below.

Component Types	Standards	Leak Definition	Repair	Exemptions
Other Monitoring:				
Pumps, valves, connectors, and agitators in heavy liquid service; instrumentation systems; and pressure relief devices in light and heavy liquid services [40 CFR 63.169]	Monitor or eliminate indications of a potential leak within 5 calendar days if there is visual, audible, or olfactory evidence of a potential leak [40 CFR 63.169(a)]	• 10,000 ppm for agitators • 2000 ppm for pumps • > 500 ppm for others [40 CFR 63.169(b)]	• Initial repair attempt no later than 5 calendar days after detecting the leak, and final repair no later than 15 calendar days after detecting the leak. [40 CFR 63.169(c)(1) & (2)] • If a potential leak has been detected without monitoring, repair means that the visual, audible, olfactory or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure. [40 CFR 63.169(c)(3)]	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.1255(a)(1)] • Equipment in vacuum service [40 CFR 63.1255(a)(8)]
Closed vent systems and control devices [40 CFR 63.172]	Conditions in Sections D.14 and D.15 of this permit are equivalent to or more stringent than 40 CFR 63.172 and are therefore the relevant requirements.			Portions of a closed vent system which are designated as unsafe to inspect or difficult to inspect: See section on unsafe, difficult and inaccessible components below.
Unsafe, difficult, or inaccessible components [40 CFR 63.1255(f)]:				
Valves, connectors, agitators, and pumps and closed vent systems designated as unsafe to monitor or unsafe to inspect [40 CFR 63.1255(f)(2)]	• Valves, connectors, agitators, pumps and closed vent systems may be designated as unsafe to monitor if the owner or operator determines that monitoring personnel would be exposed to an immediate danger as a consequence of complying with the monitoring requirements. [40 CFR 63.1255(f)(2)(i) and (ii)] • Must have written plan that requires monitoring of equipment as frequently as practicable during safe to monitor times but not more frequently than periodic monitoring schedule or annually for closed-vent systems. [40 CFR 63.1255(f)(2)(iii) and (iv)]	As per component-specific standard elsewhere in this table.		

Component Types	Standards	Leak Definition	Repair	Exemptions
Unsafe, difficult, or inaccessible components [40 CFR 63.1255(f)]:				
Valves, agitators, pumps and closed vent systems designated as difficult to monitor or difficult to inspect 40 CFR 63.1255(f)(3)	• Valves, agitators, pumps and closed vent systems may be designated as difficult to monitor if the owner or operator determines that the equipment cannot be monitored or inspected without elevating the monitoring personnel more than 2 meters above a support surface, or it is not accessible in a safe manner when it is in service. [40 CFR 63.1255(f)(3)(i) and (ii)] • Must have written plan that requires monitoring of equipment at least once per calendar year or on the periodic monitoring schedule otherwise applicable to the group of processes in which the equipment is located, whichever is less frequent and once every 5 years for closed-vent systems designated as difficult to monitor. [40 CFR 63.1255(f)(3)(iv)]	As per component-specific standard elsewhere in this table.		
Inaccessible, ceramic, or ceramic-lined connectors 40 CFR 63.1255(f)(4)	A connector may be designated as inaccessible if it is buried, insulated in a manner that prevents access to the connector by a monitor probe, obstructed by equipment or piping, unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold which would allow access to equipment up to 7.6 meters (25 feet) above the ground, not able to be accessed at any time in a safe manner to perform monitoring, requires elevating the monitoring personnel more than 2 meters above a permanent support surface or would require the erection of scaffold. [40 CFR 63.1255(f)(4)(i) and (ii)]	As per component-specific standard elsewhere in this table.	Leaks detected by visual, audible, olfactory, or other means must be repaired no later than 15 calendar days after leak is detected. [40 CFR 63.1255(f)(4)(iv)]	Any connector that is inaccessible or that is ceramic or ceramic-lined is exempt from the recordkeeping and reporting requirements. [40 CFR 63.1255(f)(4)(v)]

Component Types	Standards	Leak Definition	Repair	Exemptions
Delay of Repair:				

Component Types	Standards	Leak Definition	Repair	Exemptions
Delay of Repair:				
All component types [40 CFR 63.1255(b)(4) and 40 CFR 63.171(b)]			• Delay of repair is allowed if the repair is technically infeasible without a process shutdown. Repair shall occur by the end of the next scheduled process shutdown. [40 CFR 63.1255(b)(4)(i)(A)] • Delay of repair is allowed if the owner or operator determines that repair personnel would be exposed to an immediate danger if attempting to repair without a process shutdown. Equipment repair shall occur at end of next scheduled process shutdown. [40 CFR 63.1255(b)(4)(i)(B)] • Delay of repair is allowed if the equipment is isolated from the process and does not remain in VOC/VOHAP service. [40 CFR 63.171(b)]	
Valves, connectors and agitators [40 CFR 63.171]			• Delay of repair allowed for these components if owner/operator determines emissions of purged material resulting from immediate repair would be greater than fugitive emissions likely to result from delay of repair, and when repairs are made, the purged material is collected/ destroyed, or recovered in control device. [40 CFR 63.171(c)] • Delay of repair, beyond a process unit shutdown, is allowed for valves 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 is not allowed unless the third process unit shutdown occurs within 6 months after the first process unit shutdown. [40 CFR 63.171(e)]	

Component Types	Standards	Leak Definition	Repair	Exemptions
Delay of Repair:				
Pumps [40 CFR 63.171]			Delay of repair allowed if repair requires replacing existing seal design with dual mechanical seal pump, or with a pump with no externally actuated shaft penetrating the pump housing, or ducting the seal emissions via a closed-vent system to a control, and repair is completed as soon as practicable and not later than 6 months after leak detected. [40 CFR 63.171(d)]	
Pressure, Vacuum, or Liquid Testing Alternative:				
All component types; all equipment designated as following this alternative [40 CFR 63.1255(b)(4)(iv)(A) and 40 CFR 63.178(a), (b) and (d)]	• Each time that equipment is reconfigured for production of a different product, or intermediate, the equipment is to be pressure tested for leaks before VOHAP/VOC is first fed into the equipment. [40 CFR 63.178(b)(1)] • Pressure testing after reconfiguration is required only for the new or disturbed equipment when the equipment train is reconfigured. [40 CFR 63.178(b)(1)(i)] • If equipment is not reconfigured, it must still be tested at least once per calendar year. [40 CFR 63.178(b)(1)(ii)]	• 40 CFR 63.178(b)(2) specifies test methods at 40 CFR 63.180(f), (g). • For pressure tests using a liquid, a leak is detected if indications of dripping liquid or other evidence of fluid loss. [40 CFR 63.178(b)(3)(ii)] • For pressure or vacuum tests, a leak is detected if rate of change in pressure is > 6.9kPa in 1 hour; or if visible, audible or olfactory evidence of fluid loss. [40 CFR 63.178(b)(3)(i)]	• When leaks are detected, repairs must be made and a retest conducted before startup of the process. [40 CFR 63.178(b)(4)(i)] • If retest fails or the second of 2 consecutive pressure tests and is placed in VOHAP/VOC service, the equipment must be repaired as soon as practicable but not later than 30 calendar days after the second pressure test. [40 CFR 63.178(b)(4)(ii)]	Pressure testing is not required for routine seal breaks, such as changing hoses and filters, which are not part of the reconfiguration to produce a different product or intermediate. [40 CFR 63.178(b)(1)(iii)]

Table 2: Summary of LDAR Program for Waste Systems

Regulation Overlap Provisions: 40 CFR 63.691(b)(1) – Provision to follow 40 CFR Part 61 Subpart V to meet OSWRO MACT LDAR

Definitions: *In VOC/VHAP service* means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight a Volatile hazardous air pollutant (VHAP).
Connector means flanged, screwed, or other joined fittings used to connect two pipelines or a pipeline and a piece of equipment. For purposes of reporting and recordkeeping, connector means joined fittings not covered by insulation or other materials that prevent location of the fittings.
In vacuum service means that equipment is operating at an internal pressure which is at least 5 kPa below ambient pressure.

Component Types	Standards	Leak Definition	Repair	Exemptions
Design Specifications				
Pressure Relief Devices in Gas/Vapor Service [40 CFR 61.242-4]	No detectable emissions [40 CFR 61.2423-4(a)]	No detectable emissions (less than 500 ppm above background) [40 CFR 61.242-4(a)]	• After each release return to no detectable emissions within 5 calendar days & monitor [40 CFR 61.242-4(b)] or • Where a rupture disc is installed upstream of a pressure relief device, after each pressure release, a new rupture disc shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release. [40 CFR 61.242-4(d)] or • Vent the pressure relief device to a process or fuel gas system or equip it with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device. [40 CFR 61.242-4(c)]	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.680(c)(3)(iii)] • Equipment in vacuum service [40 CFR 61.242-1(e)]
Compressors [40 CFR 61.242-3]	• Either use a seal with barrier fluid system inspected daily or alarmed [40 CFR 61.242-3(a)-(f)] or • Equip with a closed-vent system to capture & transport compressor drive shaft seal back to a process, a fuel gas system, or a control device meeting 61.242-11 [40 CFR 61.242-3(h)] or • Use leakless design that is < 500 ppmv monitored annually [40 CFR 61.242-3(i)]	• Sensor indicates failure of seal system, barrier fluid system, or both [40 CFR 61.242-3(e) &f)] or • Leakless design $\geq$ 500 ppmv [40 CFR 61.242-3(i)] • N/A for closed vent system alternative [40 CFR 61.242-3]	• First repair attempt no later than 5 calendar days after detecting the leak, and final repair no later than 15 calendar days after detecting the leak. [40 CFR 61.242-3(g)] • N/A for closed vent system	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.680(c)(3)(iii)] • Equipment in vacuum service [40 CFR 61.242-1(e)]
Design Specifications:				

Component Types	Standards	Leak Definition	Repair	Exemptions
Sampling Connection Systems [40 CFR 61.242-5]	• Use a closed purge or closed vent system that either returns the fluid to the process or collects and recycles the purged fluid 40 CFR 61.242-5(b)(1) &(2) or • Captures and transports all purged fluids to a compliant control device [40 CFR 61.242-5(b)(3)] or • Collects, stores and transports the purged process fluid to an appropriate waste management system or facility, such as a RCRA TSD [40 CFR 61.242-5(b)(4)] • Gases displaced during filling of samples are not required to be collected or captured [40 CFR 61.242-5(a)]	N/A	N/A	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.680(c)(3)(iii)] • Equipment in vacuum service [40 CFR 61.242-1(e)] • In-situ sampling systems and systems without purges [40 CFR 61.242-5(c)]
Open-Ended Valves or Lines [40 CFR 61.242-6]	• Equip with cap, blind flange, plug or second valve to seal open end at all times, except when operations requires flow through open end or during maintenance and repair [40 CFR 40 CFR 61.242-6(a)] • Second valves: Must close valve on process fluid and prior to closing second valve [40 CFR 61.242-6(b)] • Double Block and Bleed System: may remain open during operations that require venting the line between the block valves [40 CFR 61.242-6(c)]	N/A	N/A	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.680(c)(3)(iii)] • Equipment in vacuum service [40 CFR 61.242-1(e)] • Open ended valves and lines, in an emergency shutdown system, that are designed to open automatically in the event of a process upset. Certain other open ended valves or lines that would create a safety hazard if closed. [40 CFR 61.242-6(d) & (e)]

Component Types	Standards	Leak Definition	Repair	Exemptions
Periodic Monitoring:				
Valves in Gas/Vapor Service or Light Liquid Service [40 CFR 61.242-7 and 40 CFR 61.243-1 and 40 CFR 61.243-2]	• Monitor each valve monthly [40 CFR 61.242-6(a)] • After 2 consecutive months of no leaks on a given valve, that valve may be monitored during the first month of each quarter, as long as it does not leak. If it leaks, it returns to monthly monitoring until a leak is not detected for 2 successive months. [40 CFR 61.242-6(c)] or • Monitor according to 40 CFR 61.242-6(a) and (c). Then, upon notice to the Administrator, after 2 consecutive quarters with $\leq$ 2% leakers per process unit, monitor all valves in the process unit semiannually [40 CFR 61.243-2(b)(2)] or • After 5 consecutive quarters with $\leq$ 2% leakers per process unit, monitor all valves in process unit annually. [40 CFR 61.243-2(b)(3)] • In either case, if the process unit exceeds 2% leaking valves in any monitoring period, all valves revert to individual schedules under 61.242-6, but may elect to skip again when requalified. 40 CFR 61.243-2(b)(4) or • Performance test all valves within a process unit annually and within one calendar week, or as requested by the Administrator. Percent leaking must be $\leq$ 2.0. This option may be initiated or terminated upon notification to the agency. [40 CFR 61.243-1] • No detectable emission valves must be designed with any external actuating mechanism in contact with the process fluid. These valves shall be monitored initially, annually, and as requested by the Administrator. [40 CFR 61.242-7(f)]	• 10,000 ppmv [40 CFR 61.242-7(b)] • 500 ppmv for no detectable emission valves	First repair attempt no later than 5 calendar days after detecting the leak, and final repair no later than 15 calendar days after detecting the leak. [40 CFR 61.242-7(d)]	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.680(c)(3)(iii)] • Equipment in vacuum service [40 CFR 61.242-1(e)]

Component Types	Standards	Leak Definition	Repair	Exemptions

Periodic Monitoring:				
Pumps in Light Liquid Service [40 CFR 61.242-2]	• Monitor monthly and visually inspect weekly [40 CFR 61.242-1(a)] • No monitoring required for dual mechanical seal pumps, with specific design requirements, including a barrier fluid system, with weekly visual inspections [40 CFR 61.242-1(d)] • Pumps designed with no external actuated shaft penetrating the housing may instead be monitored initially, annually, and as requested by the Administrator to confirm no detectable emissions. [40 CFR 61.242-1(e)] • No monitoring required for pumps equipped with closed vent system that ducts either to a control device or back to the process. [40 CFR 61.242-1(f)]	• 10,000 ppmv [40 CFR 61.242-1(b)(1)] • Visual: Indications of liquids dripping from pump seal. [40 CFR 61.242-1(b)(2)] • Dual mechanical seal: If visual indication of liquids dripping is confirmed by monitoring which indicates the presence of the process fluid, or VOC/VOHAP in excess of 10,000 ppmv, or sensor indicates leak [40 CFR 61.242-1(d)(4)-(6)] • 500 ppmv for no detectable emissions pumps [40 CFR 61.242-1(e)(2)]	First repair attempt no later than 5 calendar days after detecting the leak, and final repair no later than 15 calendar days after detecting the leak. [40 CFR 61.242-2(c) and 40 CFR 61.242-1(d)(6)(iii) & (iv)]	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.680(c)(3)(iii)] • Equipment in vacuum service [40 CFR 61.242-1(e)]
Other Monitoring:				
Pressure Relief Devices in Liquid Service [40 CFR 61.242-8]	If visual, audible, or olfactory evidence of a leak, either: Monitor within 5 calendar days or Repair without monitoring [40 CFR 61.242-8(a)]	10,000 ppmv [40 CFR 61.242-8(b)]	• First repair attempt no later than 5 calendar days after detecting the leak, and final repair no later than 15 calendar days after detecting the leak. [40 CFR 61.242-8(c)] • If a leak is declared without monitoring, repair means that the visual, audible, olfactory or other indication of a leak has been eliminated. [40 CFR 61.242-8(a)(2)]	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.680(c)(3)(iii)] • Equipment in vacuum service [40 CFR 61.242-1(e)]
Connectors [40 CFR 61.242-8]	If visual, audible, or olfactory evidence of a leak, either: Monitor within 5 calendar days or repair without monitoring [40 CFR 61.242-8(a)]	10,000 ppmv 40 CFR 61.242-8(b)	• First repair attempt no later than 5 calendar days after detecting the leak, and final repair no later than 15 calendar days after detecting the leak. [40 CFR 61.242-8(c)] • If a leak is declared without monitoring, repair means that the visual, audible, olfactory or other indication of a leak has been eliminated. [40 CFR 61.242-8(a)(2)]	• Equipment operated in VOC/VOHAP service less than 300 hours per year [40 CFR 63.680(c)(3)(iii)] • Equipment in vacuum service [40 CFR 61.242-1(e)]

Component Types	Standards	Leak Definition	Repair	Exemptions
Other Monitoring:				
Closed vent systems and control devices 40 CFR 61.242-11	• Conditions in Sections D.14 and D.15 of this permit are equivalent to or more stringent than 40 CFR 61.242-11(c), (e), and (f) and are therefore are the relevant requirements. • 40 CFR 61.242-11(b) and (d) do not apply.	500 ppmv or visual [40 CFR 61.242-11(g)]	First repair attempt no later than 5 calendar days after detecting the leak, and final repair no later than 15 calendar days after detecting the leak. [40 CFR 61.242-11(g)]	Closed vent system portions that are operated under a vacuum. [40 CFR 61.242-11(k)]
Unsafe, difficult, or inaccessible components [40 CFR 63.1255(f)]:				
Valves, pumps and closed-vent systems designated as unsafe to monitor or unsafe to inspect [40 CFR 61-242-7(g), 40 CFR 61-242-1(g) and 40 CFR 61-242-11(j)]	Valves, pumps and portions of a closed-vent system designated unsafe-to-monitor/ inspect must be monitored/inspected according to a written plan to monitor as frequently as practicable during safe-to-monitor times [40 CFR 61.242-7(g), 40 CFR 61.242-1(g), 40 CFR 61.242-11(j)]			
Valves and closed-vent systems designated as difficult to monitor or difficult to inspect [40 CFR 61-242-7(h) and 40 CFR 61.242-11(k)]	Valves and portions of a closed-vent system designated difficult to monitor/inspect must be monitored according to a written plan that requires monitoring of the valve at least once/ year and inspection of the closed-vent system at least every 5 years. [40 CFR 61.242-7(h), 40 CFR 61.242-11(k)]			
Delay of Repair [40 CFR 61.242-10]				
All component types			• Delay of repair is allowed if the repair is technically infeasible without a process shutdown. Repair shall occur by the end of the next scheduled process shutdown. [40 CFR 61.242-10(a)] • Delay of repair is allowed if the equipment is isolated from the process and does not remain in VOC/VOHAP service. [40 CFR 61.242-10(b)]	

Component Types	Standards	Leak Definition	Repair	Exemptions
Delay of Repair [40 CFR 61.242-10]				

Valves			• Delay of repair allowed if owner/operator determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions likely to result fro delay of repair, and when the repairs are made, the purged material is collected and destroyed, or recovered in a control device. [40 CFR 61.242-10(c)] • Delay of repair, beyond a process unit shutdown, is allowed 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 next process unit shutdown is not allowed unless the next process unit shutdown occurs within 6 months after the first process unit shutdown. [40 CFR 61.242-10(e)]	
Pumps			Delay of repair is allowed if repair requires replacing the existing seal design with a dual mechanical seal pump and repair is completed as soon as practicable and not later than 6 months after the leak was detected. 40 CFR 61.242-10(d)	

Federal Rule Applicability - Entire Source

CAM

(a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to each existing pollutant-specific emission unit that meets the following criteria:

(1) has a potential to emit before controls equal to or greater than the major source threshold for the pollutant involved;

(2) is subject to an emission limitation or standard for that pollutant; and

(3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

CAM Applicability Analysis							
Emission Unit	**Pollutant**	**Control Device Used**	**Emission Limitation** (Y/N)	**Uncontrolled PTE** (ton/yr)	**Part 70 Major Source Threshold** (ton/yr)	**CAM Applicable** (Y/N)	**Large Unit** (Y/N)
T26 BLR4001	NOx	N	Y	>100	100	N	N
T26 BLR4002	NOx	N	Y	>100	100	N	N
T49	NOx	scrubber	N	>100	100	N	N
T149	NOx	scrubber	N	>100	100	N	N
RTOs 1 & 2	NOx	scrubber	N	>100	100	N	N
T6 BLR004	PM	N	Y	<100	100	N	N
T6 BLR005	PM	N	Y	<100	100	N	N
T26 BLR4001	PM	N	Y	<100	100	N	N
T26 BLR4002	PM	N	Y	<100	100	N	N
T1 MIX001, MIX002, MCNV001	PM	Y	Dust Collector	<100	100	N	N
T2 TK001 thru TK020	PM	Y	Cyclone	<100	100	N	N
T2A TK021 thru TK030	PM	Y	Cyclone	<100	100	N	N
T2C TK043 thru TK050	PM	Y	Cyclone	<100	100	N	N
T49	PM	N	Scrubber	<100	100	N	N
T149	PM	N	Scrubber	>100	100	N	N
T3 RVD040	HAP	N	N	<25	25	N	N
BCM Support	HAP	N	Fume Incinerator & Scrubber	>25	25	N	N
T49	HAP	N	Scrubber	>25	25	N	N
T149	HAP	N	Scrubber	>25	25	N	N
BCM & RTOs 1 and 2	HAP	N	RTO & Scrubber	>25	25	N	N
BCM Support	VOC	N	T179	>100	100	N	N
T49	VOC	N	N	>100	100	N	N
T149	VOC	N	N	>100	100	N	N
BCM	VOC	N	RTOs 1 &2	>100	100	N	N
T26 BLR4001	CO	N	N	>100	100	N	N
T26 BLR4002	CO	N	N	>100	100	N	N
T26 COMP 5600 A	CO	N	N	<100	100	N	N
T49	CO	N	N	>100	100	N	N
T149	CO	N	N	>100	100	N	N
RTOs 1 & 2	CO	N	N	>100	100	N	N
T110 TKA, TKB, TKC, and TKD	TRS	Y	Iron Sponge	<100	100	N	N

Based on this evaluation, the requirements of 40 CFR Part 64, CAM are not applicable to any of the existing units as part of this Part 70 permit renewal, since the emission units do not have emission limitations or standard for that pollutant or do not use a control device to comply with that emission limitation or standard.

NSPS

See the individual sections above for NSPS applicability determinations.

NESHAP

See the individual sections above for NESHAP applicability determinations.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)
This source is subject to 326 IAC 2-6 (Emission Reporting) because it is required to have an operating permit pursuant to 326 IAC 2-7 (Part 70). The potential to emit of VOC/PM10 is greater than 250 tons per year, and/or the potential to emit of CO/NOx/SO2 is greater than 2,500 tons per year. Therefore, pursuant to 326 IAC 2-6-3(a)(1), annual reporting is required. An emission statement shall be submitted by July 1, 2014 and every year thereafter. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

326 IAC 5-1 (Opacity Limitations)
This source is subject to the opacity limitations specified in 326 IAC 5-1-2(1)

326 IAC 6.5 PM Limitations Except Lake County
This source is not subject to 326 IAC 6.5 because it is not located in one of the following counties: Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne.

326 IAC 6.8 PM Limitations for Lake County
This source is not subject to 326 IAC 6.8 because it is not located in Lake County.

Compliance Determination and Monitoring Requirements

See the individual sections above for compliance determination and monitoring requirements.

Recommendation

The staff recommends to the Commissioner that the Part 70 Operating Permit Renewal be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on July 22, 2013. Additional information was received on October 11, 2013, October 18, 2013, November 27, 2013.

Conclusion

The operation of this stationary pharmaceutical and animal health manufacturing plant shall be subject to the conditions of the attached Part 70 Operating Permit Renewal No. 157-33448-00006.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Deena Patton at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5400 or toll free at 1-800-451-6027 extension 4-5400.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm

Appendix D – BACT Analyses

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD)
Best Available Control Technology

Source Background and Description

Source Name:	**Evonik Corporation Tippecanoe Laboratories**
Source Location:	**1650 Lilly Road, Lafayette, IN 47909**
County:	**Tippecanoe**
SIC Code:	**2833, 2834, 2879, and 2869**
Operation Permit No.:	**T 157-6879-00006**
Operation Permit Issuance Date:	**February 27, 2004**
Title V Operating Permit Renewal No.:	**T 157-33448-00006**
Permit Reviewer:	**Deena Patton**

Proposed Expansion

Evonik Corporation Tippecanoe Laboratories (Evonik) is a custom manufacturing facility that primarily produces pharmaceuticals for people and animals. Evonik may also broaden the scope of production to include other specific or miscellaneous chemical manufacturing (e.g., nutritional products) to meet the needs of the site's customer base. In this Prevention of Significant Deterioration (PSD)/Flexible Permit, Evonik proposes to modify Evonik through a series of product and process changes, replacement of existing production equipment and buildings and installation of new production equipment. This proposal is essentially an extension of the existing flexible permit of Evonik except that the PSD application also incorporates production of specific and miscellaneous chemical manufacturing. In lieu of evaluating future changes for PSD applicability, and potentially requiring time and resource-consuming permit reviews for each individual change, Evonik proposes to evaluate the parts of the existing plant site affected by the changes and the types of changes it intends to make in the future under the Prevention of Significant Deterioration (PSD) program (326 IAC 2-2). This approach is allowed under provisions in Indiana’s air permit regulations (326 IAC 2-2 and 326 IAC 2-7-5(16)) and guidance issued by USEPA in its draft White Paper 3 on implementing the Title V operating permit program. The PSD permit will allow Evonik to make changes in the future with minimal administrative requirements and will assure compliance with all applicable Clean Air Act requirements.

Evonik Corporation - Tippecanoe Laboratories, located at 1650 Lilly Road, Lafayette, Indiana, in Tippecanoe County submitted a PSD application and Title V Flexible Permit Renewal to IDEM, OAQ on July 22, 2013.

Requirement for Best Available Control Technology (BACT)

326 IAC 2-2 requires a best available control technology (BACT) review to be performed on the proposed modification because the modification has the potential to emit of VOC, CO, and F emissions greater than 40, 100 and 3 tons per year, respectively, which exceeds the significant level for these pollutants.

Emission Units Subject to BACT Requirements for VOC, CO and F:

The following emission units have the potential to emit Volatile Organic Compounds (VOC), carbon monoxide (CO) and Fluorides (F-); therefore, a Best Available Control Technology analyses for VOC, CO and Fluorides was performed for these units:

(1) BCM Operations – VOC, CO and Fluorides

(2) BCM Support Operations – VOC

(3) T49 Liquid Waste Incinerator – VOC, CO and Fluorides

(4) T149 Solid-Liquid Waste Incinerator – VOC, CO and Fluorides

Requirement for VOC, CO, and Fluoride (F-) BACT

The BCM Operations, BCM Support Operations, T49 Liquid Waste Incinerator, and T149 Solid-Liquid Incinerator operations has the total potential to emit of volatile organic compounds (VOC), carbon monoxide (CO) and Fluorides (F-) greater than 40, 100 and 3 tons per year, respectively; therefore, Best Available Control Technology analyses for VOC, CO and Fluorides (F-) were performed for BCM Operations, BCM Support Operations, T49 Liquid Waste Incinerator and T149 Solid-Liquid Waste Incinerator.

Summary of the Best Available Control Technology (BACT) Process

BACT is an emissions limitation based on the maximum degree of pollution reduction of emissions, which is achievable on a case-by-case basis. BACT analysis takes into account the energy, environmental, and economic impacts on the source. These reductions may be determined through the application of available control techniques, process design, work practices, and operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause or contribute significantly to air pollution, thereby protecting public health and the environment.

Federal guidance on BACT requires an evaluation that follows a “top down” process. In this approach, the applicant identifies the best-controlled similar source on the basis of controls required by regulation or permit, or controls achieved in practice. The highest level of control is then evaluated for technical feasibility.

The five (5) basic steps of a top-down BACT analysis are listed below:

Step 1: Identify Potential Control Technologies

The first step is to identify potentially “available” control options for each emission unit and for each pollutant under review. Available options should consist of a comprehensive list of those technologies with a potentially practical application to the emissions unit in question. The list should include lowest achievable emission rate (LAER) technologies, innovative technologies, and controls applied to similar source categories.

Step 2: Eliminate Technically Infeasible Options

The second step is to eliminate technically infeasible options from further consideration. To be considered feasible, a technology must be both available and applicable. It is important in this step that any presentation of a technical argument for eliminating a technology from further consideration be clearly documented based on physical, chemical, engineering, and source-specific factors related to safe and successful use of the controls. Innovative control means a control that has not been demonstrated in a commercial application on similar units. Innovative controls are normally given a waiver from the BACT requirements due to the uncertainty of actual control efficiency. A control technology is considered available when there are sufficient data indicating that the technology results in a reduction in emissions of regulated pollutants.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

The third step is to rank the technologies not eliminated in Step 2 in order of descending control effectiveness for each pollutant of concern. The ranked alternatives are reviewed in terms of environmental, energy, and economic impacts specific to the proposed modification. If the analysis determines that the evaluated alternative is not appropriate as BACT due to any of the impacts, then the next most effective is evaluated. This process is repeated until a control alternative is chosen as BACT. If the highest ranked technology is proposed as BACT, it is not necessary to perform any further technical or economic evaluation, except for the environmental analyses.

Step 4: Evaluate the Most Effective Controls and Document the Results

The fourth step entails an evaluation of energy, environmental, and economic impacts for determining a final level of control. The evaluation begins with the most stringent control option and continues until a technology under consideration cannot be eliminated based on adverse energy, environmental, or economic impacts.

For the technologies determined to be feasible, there may be several different limits that have been set as BACT for the same control technology. The permitting agency has to choose the most stringent limit as BACT unless the applicant demonstrates in a convincing manner why that limit is not feasible. BACT must, at a minimum, be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and National Emissions Standard for Hazardous Air Pollutants (NESHAP) or state regulatory standards applicable to the emission units included in the permits.

Step 5: Select BACT

The Office of Air Quality (OAQ) makes final BACT determinations by following the five steps identified above.

Volatile Organic Compounds (VOC) BACT – BCM Operations

Step 1: Identify Potential Control Technologies

The volatile organic compounds (VOC) emissions can be controlled by the following emission control systems:

(1) Destruction Processes;

(2) Reclamation Processes; and/or

(3) Combination of Reclamation and Destruction Technologies.

Destruction technologies reduce VOC concentration by high temperature oxidation into carbon dioxide and water vapor. Reclamation is the capture of VOCs for reuse or disposal. A further description of these types of control technologies follows.

Destruction Control Methods

The destruction of organic compounds usually requires temperatures ranging from 1,200^{0}F to 2,000^{0}F for direct thermal incinerators or 600^{0}F to 1,200^{0}F for catalytic systems. Combustion temperature depends on the chemical composition and the desired destruction efficiency. Carbon dioxide and water vapor are the typical products of complete combustion. Turbulent mixing and combustion chamber retention times of 0.5 to 1.0 seconds are needed to obtain high destruction efficiencies.

Control technologies include direct incineration, recuperative thermal incineration, regenerative thermal incineration, recuperative catalytic incineration, regenerative catalytic incineration, and flares.

Direct Incineration: Direct incineration is the most simple and direct form of incineration. It involves burning the VOC-laden fumes directly in a combustion chamber without pre-heating or post-combustion heat recover. Direct incineration typically requires supplemental fuel. Concentrated VOC streams with high heat contents obviously require less supplementary fuel than more dilute streams. VOC streams sometimes have a heat content high enough to be self-sustaining, but a supplemental fuel firing rate equal to about 5% of the total incinerator heat input is usually needed to stabilize the burner flame. Natural gas is the most common fuel for VOC incinerators, but fuel oil is an option in some circumstances.

Recuperative Thermal Oxidation: Recuperative thermal incinerators are add-on control devices used to control VOC emissions by introducing solvent-laden fumes to the oxidizer. The stream is pre-heated by exiting flue gas from the same system in a heat exchanger or recuperator. A burner then heats the air to the required temperature. The air is then passed through an oxidation chamber where the solvent-laden air is converted to carbon dioxide and water. These are then passed through the heat exchanger where incoming fume is preheated by the heat of the exiting flue gas. Finally the clean flue gas is discharged to the atmosphere. The recuperative thermal oxidizer is appropriate for waste streams with a relatively high solvent content and/or consistent pollutant loading. Variation in pollutant loading will require a longer retention time in the oxidizer in order to properly destroy VOC emissions.

Regenerative Thermal Oxidation: Regenerative thermal oxidizers (RTOs) are add-on control devices used to control VOC emissions by simple reaction of the harmful air pollutants with oxygen and heat. An RTO uses a direct contact heat exchanger. These direct contact heat exchangers consist of a bed of porous ceramic packing or other structured, high heat capacity media. These systems can handle variable and low-concentration VOC waste streams.

The inlet gas first passes through a hot ceramic bed thereby heating the stream (and cooling the bed) to its ignition temperature. The hot gases then react (releasing energy) in the combustion chamber and while passing through another ceramic bed, thereby heating it to the combustion chamber outlet temperature. The process flows are then switched, now feeding the inlet stream to the hot bed. This cyclic process affords very high energy recovery (up to 95%). The higher capital costs associated with these high-performance heat exchangers and combustion chambers may be offset by the increased auxiliary fuel savings to make such a system economical.

Recuperative and Regenerative Catalytic Oxidation: Catalytic incinerators are add-on control devices used to control VOC emissions by using a bed of catalyst that facilitates the oxidation of the combustible gases. The catalyst increases the reaction rate and allows the conversion of VOC at lower temperatures than thermal incinerators. Catalytic oxidation can be used for low-concentration VOC waste streams; however, certain compounds present in waste stream gas may foul the catalyst. It may also be necessary to remove particulate prior to catalytic oxidation as well.

Flares: Flaring is used to control VOC emissions by piping VOCs to a remote, usually elevated location and burning them in an open flame in the open air using a specially designed burner tip, auxiliary fuel, and steam or air to promote mixing for nearly complete (> 98%) VOC destruction. While flares are designed to eliminate waste gas streams, they can cause safety and operational problems and the exhaust stream concentration must be high enough to sustain combustion.

Reclamation Control Methods
Organic compounds may be reclaimed by one of three possible methods; adsorption, absorption (scrubbing) or condensation. In general, the organic compounds are separated from the emission stream and reclaimed for reuse or disposal. Depending on the nature of the contaminant and the inlet concentration of the emission stream, recovery technologies can reach efficiencies of 98%.

Adsorption: Adsorption is a surface phenomenon where attraction between the carbon and VOC molecules binds the pollutants to the carbon surface. Both carbon and VOC are chemically intact after adsorption. The VOCs may be removed, or desorbed, from the carbon bed reclaimed and destroyed. Adsorption can be used for relatively low VOC exhaust streams. Pollutants present in the gas streams can reduce adsorber efficiency, increase pressure drop and eventually plug the bed. Adsorption processes can be used to capture VOCs in low concentration exhaust; however, it is typically only used for exhaust that is not loaded with other pollutants which can plug the bed.

Absorption: Absorption is a unit operation where components of a gas phase mixture (Pollutants) are selectively transferred to a relatively nonvolatile liquid, usually water. Sometimes, organic liquids, such as mineral oil or nonvolatile hydrocarbons, are suitable absorption solvents. The choice of solvent depends on cost and solubility of the pollutant in the solvent. Absorption is commonly used to recover products or purify gas streams that have high concentrations of organic compounds. Absorption processes are typically used to recover products or purify gas streams with high concentrations of organic compounds such as in the ethanol production and soybean oil refinery industries.

Condensation: Condensation is the separation of VOCs from an emission stream through a phase change, by increasing the system pressure or, more commonly, lowering the system temperature below the dew point of the VOC vapor. When condensers are used for air pollution control, they usually operate at the pressure of the emission stream, and typically require a refrigeration unit to obtain the temperature necessary to condense the VOCs from the emission stream. These systems are frequently used prior to other control devices (e.g., oxidizers or absorbers) to remove components that may be corrosive or damaging to other parts of the system. Refrigerated condensers are used as air pollution control devices for treating emission streams with high VOC concentrations (usually > 5,000 ppmv). Condensers may be used to control VOC emissions with high VOC concentrations (usually greater than 5,000 ppmv).

Combinations of Reclamation and Destruction Control Methods

In some cases, a combination of control technologies offers the most efficient and cost effective VOC control.

The combination of carbon adsorption with recuperative thermal incineration is available commercially. This system concentrates the VOC stream by using carbon adsorption to remove low concentration VOCs in an emission stream and then uses a lower volume of hot air, commonly one-tenth the original flow, to desorb the pollutants. A recuperative incinerator for destroying pollutants in the concentrated stream is much smaller and has lower supplemental fuel requirement than an incinerator sized for the full emission stream volume.

Absorption systems can also be used to concentrate emission streams to reduce the size of destruction equipment. The concentration effect is not as extreme as with carbon adsorption, a concentrated exhaust stream one quarter the volume of the inlet stream seems to be the practical limit. Absorption concentrators are typically suited for batch processes or to equalize pollutant concentrations in a variable stream. The physical characteristics that drive the absorption of pollutants into a liquid also limit the opportunity to remove those pollutants from the liquid stream.
Fume incinerators typically need supplemental fuel. Concentrated VOC streams with high heat contents obviously require less supplementary fuel than more dilute streams. VOC streams sometimes have a heat content high enough to be self-sustaining, but a supplemental fuel firing rate equal to about 5% of the total incinerator heat input is usually needed to stabilize the burner flame. Natural gas is the most common fuel for VOC incinerators, but fuel oil is an option in some circumstances.

Step 2: Eliminate Technically Infeasible Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing VOC emissions from emissions units at BCM operation. The control technologies listed in the previous section are discussed and evaluated below for their technical feasibility.

Destruction Control Methods

Direct Incineration: Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of direct incineration is not a technically feasible option for the BCM Operations at this source because direct incineration typically needs VOC inlet concentrations of at least 1500 to 3000 ppm to perform acceptably without requiring significant quantities of supplemental fuel to sustain temperatures. The inlet concentrations for Evonik will be highly variable and will frequently fall well below the 1500 to 3000 ppm minimum range for direct thermal incineration.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a Direct Incineration is not a technically feasible option for the BCM Operation at this source.

Recuperative Thermal Oxidation: Recuperative thermal oxidation typically needs VOC inlet concentrations of at least 1500 to 3000 ppm to perform acceptably without requiring significant quantities of supplemental fuel to sustain temperatures. The inlet concentrations for Evonik will be highly variable and will frequently fall well below the 1500 to 3000 ppm minimum range for recuperative thermal incineration.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a Recuperative Thermal Oxidation is not a technically feasible option for the BCM Operation at this source.

Regenerative Thermal Oxidation: These systems can handle variable and low-concentration VOC waste streams, which are the types of streams in Evonik's BCM Operations.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a Regenerative Thermal Oxidization is a technically feasible option for the BCM Operation at this source.

Recuperative and Regenerative Catalytic Oxidation: Compounds present in waste stream gas may foul the catalyst. It may also be necessary to remove particulate prior to catalytic oxidation as well.

IDEM, OAQ has determined that the use of a Recuperative and Regenerative Catalytic Oxidation is not a technically feasible option for the BCM Operation at this source.

Flares: While flares are designed to eliminate waste gas streams, they can cause safety and operational problems and the exhaust stream concentration must be high enough to sustain combustion. The VOC concentration in the BCM exhaust stream is too low to sustain usage of a flare.

Based on this, as well as the safety issues associated with flares, IDEM, OAQ has determined that Flaring is not a technically feasible option for the BCM Operation at this source.

Reclamation Control Methods

Adsorption: Based on a review of the RBLC, this type of control has been used in the printing and petroleum refinery industries. This type of control is not typically used in pharmaceutical and chemical industries, and based on the pollutant loading of the exhaust stream, adsorption is not considered technically feasible for the BCM operations as plugging of the adsorption media may occur. In addition, the variety of solvents used by Evonik may result in emissions of ketones, which should not be controlled by carbon adsorption systems because of the heat generated when ketones are adsorbed by carbon.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of Adsorption is not technically feasible option for the BCM Operation at this source.

Absorption: Absorption is not considered a technically feasible application for VOC control of emissions from the BCM Operations due to the low concentration of VOC in the exhaust.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of Absorption is not technically feasible option for the BCM Operation at this source.

Condensation: Condensers are not considered technically feasible for the application of controlling VOC emissions from the BCM Operations due to the low concentration of VOC in the exhaust and the wide variety of solvents that may be emitted by Evonik.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of Condensation is not technically feasible option for the BCM Operation at this source.

Combinations of Reclamation and Destruction Control Methods

Because none of the reclamation based technologies are technically feasible or appropriate for a low concentration, variable content emission stream like Evonik's, combinations of reclamation and destruction control methods are not technically feasible at Evonik. Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a Combination of Reclamation and Destruction Control Methods is not a technically feasible option for the BCM Operation at this source.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of Regenerative Thermal Oxidization has been identified for control of VOC resulting from BCM Operations at Evonik.

Regenerative Thermal Oxidizer - 98 % destruction efficiency or 20 ppmv based on a 24-hour average.

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed VOC BACT determination along with the existing VOC BACT determinations for BCM operations. All data in the table is based on the information obtained from the permit application submitted by Evonik Corporation - Tippecanoe Laboratories, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

Company Name / Operation	Process Description	Control Type	Control Efficiency
PROPOSED VOC BACT FOR BCM Operations Point Source Emissions			
Evonik Corporation, Tippecanoe Laboratories - Lafayette, IN (Proposed 157—34091-00006)	BCM Operations	Regenerative Thermal Oxidation (RTO)	98% control of VOC/VOHAP or 20 ppmv based on 24-hour average
COMPARABLE BACT DETERMINATIONS (Pharmaceutical, Miscellaneous Chemical, and Specific Chemical Manufacturing)			
Eli Lilly and Company – Clinton Labs (IN-0144)	Narasin Fermentation	None	100 ton/yr (control efficiency not provided)
Eli Lilly and Company – Clinton Labs (IN-0144)	Narasin Recovery Operation	Carbon Adsorption	98%
Eli Lilly and Company – Clinton Labs (IN-0144)	Narasin Finishing Operation	Carbon Adsorption	98%
Eli Lilly and Company – Clinton Labs (IN-0144)	Other Narasin Recovery Operation	None	None
Eli Lilly and Company – Clinton Labs (IN-0144)	Evaporator	Carbon Adsorption	98%
Evonik Degussa Corporation – Tippecanoe Laboratories (IN-0146)	BPM* Operations	RTO	98% or 20 ppmv
Evonik Degussa Corporation – Tippecanoe Laboratories (IN-0146)	BPM* Support Operations	Incineration System	98%
Merck and Co. (Cherokee) (PA-0265)	Pharmaceutical Manufacturing	Scrubbers and Incinerator	82.14 ton/yr (control efficiency not provided)
Archer Daniels Midland (IA-0088)	Dry Germ Storage Silo		20 ppmv
Archer Daniels Midland (IA-0088)	Indirect-Fired DDGS Dryer	Gasses through the dryer's combustion chamber	98%
Archer Daniels Midland (IA-0088)	Germ Dryers and Coolers	Wet Scrubber	7.5 ppmvd
Archer Daniels Midland (IA-0088)	Wastewater Treatment Plant Aeration Tank		20 ppmvd
Archer Daniels Midland (IA-0088)	Wastewater Treatment Plant Anaerobic Digester	Enclosed flare	98%
Archer Daniels Midland (IA-0088)	Fermentation, Distillation, and Dehydration	CO2 scrubber, distillation NCG scrubber, RTO	98%
Archer Daniels Midland (IA-0088)	Dry Feed Storage Silo		20 ppmvd

Homeland Energy Solutions (IA-0089)	Biomethanator Flare		98%
Homeland Energy Solutions (IA-0089)	Fermenters and Beerwell	Scrubber	97%
Aventine Renewable Energy (IL-0102)	Miscellaneous Units		100 ppm
New Energy Corporation (IN-0122)	DDGS Cooler System	RTO	98%
Bio-Alternative (IN-0123)	Biodiesel Production Plant	Final vent condenser and scrubber	98%
Swift Fuels (IN-0153)	Mesitylene Processing Skid	Open flare	98%
(MN-0062)	DGS Drying Operation	Thermal oxidizer	95%
Red Trail Energy (ND-0020)	DDGS Cooling		20 ppmv
Red Trail Energy (ND-0020)	Ethanol Storage Tanks	Internal floating roof	95%
Natureworks (NE-0043)	Polymer Production	Thermal oxidizer	98%
Aventine Renewable Energy (NE-0046)	Pre-Fermentation, Distillation, and DGS Drying Operations	RTO	99%, 50 ppmvd
Flopam (LA-0240)	Thermal Oxidizers	RTO	99%
Flopam (LA-0240)	DADMAC/CM/ADAM/ATBS Plants	Thermal oxidizers	99%
Avoca (NC-0111)	Recovery Operation Wastewater Tanks and Other Similar Operations	Fixed roofs and biological treatment	95%
Aventine Renewable Energy (NE-0046)	Pre-Fermentation, Distillation, and DGS Drying Operations	RTO	99%, 50 ppmvd
Red Trail Energy (ND-0020)	DDGS Cooling		20 ppmv
Red Trail Energy (ND-0020)	Ethanol Storage Tanks	Internal floating roof	95%
Swift Fuels (IN-0153)	Mesitylene Processing Skid	Open flare	98%

The most stringent VOC emission limitation contained in the comparable BACT Determinations table are 99% reduction and 7.5 ppm, which are associated with chemical operations.

In evaluating BACT for VOC control of chemical operations, it is important to note that the control efficiency anticipated for a given emission unit/control equipment combination is dependent upon the uncontrolled VOC emission rate of the emission unit. Even though a unit may be listed with high control efficiency in the RBLC, the same control equipment would be expected to have lower control efficiency if the uncontrolled emission rate is lower. Evonik has focused its BACT evaluation on the extent to which the selected control equipment corresponds to the control equipment type utilized at the best-controlled facility identified in RBLC.

The Archer Daniels Midland (ADM) Facility proposes a BACT limit of 7.5 ppmvd of VOC. This limit is specific to the germ dryer and cooler at the ADM facility. However, all other operations in the Archer Midland Daniels permit have a limit of 20 ppm or 98% control. In addition, germ dryers typically operate with a single feed and product streams, providing a more consistent emissions profile that is controlled by a wet scrubber. On the other hand, the incinerators at Evonik must be able to control a wide range of emission stream profiles due to differences in VOC and HAP emissions from several different types of unit operations operating at any given time. Since the Evonik limit will apply to all unit operations in BCM and BCM support, the 20 ppm and 98% for other ADM operations is more reflective of the collection of all VOC BACT.

The Aventine Renewable Energy Facility proposes a BACT of 99% and 50 ppmvd. Although the control efficiency is more stringent at 99% as compared to the currently permitted 98% at Evonik, the outlet concentration of 50 ppmvd for the Aventine Facility is less stringent than 20 ppm, the current BACT limit at Evonik. Therefore, the Aventine VOC limit is not established to be more stringent than the limits proposed for Evonik.

The Flopam Facility proposes a BACT limit of 99% control efficiency. Compliance with 99% control efficiency would require installation of new control devices. Evonik has performed an analysis of the cost (Appendix E) to add an additional RTO to the VOC control system for the BCM exhaust stream using cost equations contained in the EPA document *Air Pollution Control Cost Manual 6th Ed.* (EPA/452/B-02-00,2002). Based on an air flow rate of 100,000 cfm and an inlet VOC concentration of 20 ppmv, Evonik estimates capital and operating costs for such a system to be:

- Capital cost = $3,529,516
- Operating costs = $574,412 per year
- Cost effectiveness = $29,007 per ton of VOC controlled

The cost effectiveness to add a new RTO to the BCM operations is clearly beyond the level that would be considered economically reasonable under state and federal guidelines for BACT
The additional cost for installing a new RTO, based purely on capital costs and assuming no change in operating cost, is $29,007/ton, which is outside the range of cost feasibility for VOC. Therefore, achieving the 99% control efficiency in the Flopam permit is not cost effective and not applicable as BACT for Evonik.

After excluding these operations, the 98% control or 20 ppmv are representative of the most stringent limits in the RBLC, which is the limit proposed for the flexible permit.

Evonik asserts that the limit proposed in its BACT analysis represents the lowest limit that a regenerative thermal oxidizer (RTO) with a multi-facility, multi-solvent emission stream is reasonably capable of meeting. In order for Evonik to meet an emission rate comparable to that required for Flopam, a new RTO would have to be added to the existing control system for BCM. Given the low level of additional VOC removal that this would provide (in comparison with estimated capital and operating costs), IDEM, OAQ concludes that this option would not be considered to be BACT for this unit. Since this unit is not comparable to the Evonik operation, the most stringent applicable limit for VOC emissions from pharmaceutical and chemical operations is the BACT limit for BCM contained in the original Flexible Permit.

Regulatory Limits: The most stringent VOC emission limitation applicable by rule to this emission unit is the pharmaceutical MACT, SOCMI, and MON standards. The most stringent of the MACT standards requires organic HAP emissions to be controlled by 98% or to 20 ppmv VOC. Please note that the HON specifies that the 20 ppmv shall be calculated on a dry basis, corrected to 3% oxygen. These rules also contain requirements for leak detection and repair programs for components in organic HAP service. There are no emission limits for similar sources that would create any more stringent emission limits for pharmaceutical, miscellaneous chemical manufacturing, and SOCMI operations.

Permit Limits: The most stringent permit limit contained in RBLC for a comparable unit is the existing BCM BACT limit of 98% control or 20 ppmv.

Feasibility of Control Technology: VOC emissions may be controlled by a variety of control technologies. However, there is no technology that would be expected to achieve an overall control efficiency (or outlet VOC emission rate) more stringent than the existing BACT limit for BCM.

Based on these data, IDEM concludes that VOC BACT from the RTO is 20 ppmv or 98% control, which is equivalent to the Pharmaceutical MACT, HON, and MON requirements. For specific chemical (SOCMI) operations, the 20 ppmv limit shall further be specified as calculated on a dry basis, corrected to 3% oxygen.

Evonik proposes two exceptions to the general proposal that VOC BACT for the BCM operations/RTO is 20 ppmv or 98% control efficiency. First, vents that contain highly explosive gases, such as hydrogen, should not be routed to the RTOs, as this presents a safety hazard to the entire RTO ductwork system and the RTOs. This proposal is consistent with the Pharmaceutical MACT requirements, which allows for this exception provided the sum of uncontrolled emissions from any single vent do not exceed 900 kilograms per 365 day period and the total of all uncontrolled process vents do not exceed 1800 kilograms per 365 day period. IDEM accepted this exception as BACT in the current permit. Condition D.6.1(c) reflects this exception.

Second, as was determined in Significant Source Modification 157-20160-00006, issued December 30, 2004, and re-established in this application, BACT is no emission controls for production equipment local exhaust vent (LEV) systems containing less than 50 ppm HAPs or with actual emissions less than 33 lb/day of VOCs. For production equipment exhaust systems (i.e., LEVs) with emissions above 50 ppm HAP or 33lb/day of actual VOC emissions, BACT is the RTO. Condition D.6.2 of the existing Title V permit reflects this BACT determination.

Additionally, Evonik proposes an alternative for BCM Individual Drain Systems (IDS) such that IDS may be controlled via a closed-vent system with vapors routed to the RTO or IDS may be designed with a water seal or tightly fitting cap.

Proposal: **Evonik Corporation - Tippecanoe Laboratories** – Lafayette, IN
The following has been proposed as BACT for VOC for BCM Operations:

(a) VOC point source emissions: Regenerative Thermal Oxidizer (RTO) to control VOC emissions to a volumetric concentration of no more than 20 parts per million (ppmv) based on a 24 - hour daily average, or 98 % of VOC/VOHAP destruction efficiency.

(b) No control for production equipment local exhaust vent (LEV) less than 50ppm of HAPs or less than 33 lbs/day of actual emissions.

Step 5: Select BACT

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD)), IDEM, OAQ has determined the following for VOC BACT for the BCM Operation:

a) The BCM Operation shall use a Regenerative Thermal Oxidizer (RTO) to control VOC emissions to a volumetric concentration of no more than 20 parts per million volume (ppmv) based on a 24-hour block average or reduce VOC emissions by a control efficiency of 98% or more.

b) The VOC BACT for production equipment exhaust systems (i.e. Local Exhaust Vents) containing less than 50 ppm HAPs or with actual emissions less than 33 lbs/day of actual emissions will not be further evaluated as the emissions are very small.

c) vents that contain highly explosive gases, such as hydrogen, should not be routed to the RTOs

Carbon Monoxide (CO) BACT - BCM Operations

Step 1: Identify Potential Control Technologies

Carbon Monoxide (CO) is formed through the incomplete oxidation of organic material to carbon dioxide (CO2). Factors that may lead to the formation of carbon monoxide include inadequate air flow rates, inadequate mixing of air and fuel, and improper temperatures in combustion zones. CO emission control is achieved by design optimization in combustion equipment (i.e., good combustion practices) to minimize CO formation or by the use of add-on control units that will facilitate the further oxidation of CO to CO2. Add-on control units consist of thermal oxidizers, primarily catalytic oxidizers.

Good Combustion Practices

Combustion equipment design focuses on proper air to fuel ratios, good mixing of air and fuel, and control of combustion chamber temperatures to minimize CO emissions. In situations where CO is generated by process activities (such as chemical reactions) or where combustion equipment design are inadequate to achieve the desired level of control, add-on- controls may be necessary to limit CO emissions.

Thermal Oxidizers

The thermal oxidizer is a nozzle-stabilized flame maintained by a combination of auxiliary fuel, waste gas compounds, and supplemental air added when necessary. This technology is typically applied for destruction of organic vapors, nevertheless it is also considered as a technology for controlling CO emissions. Upon passing through the flame, The CO-containing mixture ignites at some temperature between the preheat temperature and the reaction temperature. The ignition occurs at some point during the heating of a waste stream as it passes through the nozzle-stabilized flame regardless of its concentration. The mixture continues to react as it flows through the combustion chamber.

The required level of CO destruction of the waste gas that must be achieved within the time that it spends in the thermal combustion chamber dictates the reactor temperature. The shorter the residence time, the higher the reactor temperature must be. Most thermal units are designed to provide no more than 1 second of residence time to the waste gas with typical temperatures of 1,200 to 2,000^{o}F. Once the unit is designed and built, the residence time is not easily changed, so that the required reaction temperature becomes a function of the particular gaseous species and the desired level of control.

Recuperative Thermal Oxidizer: The Recuperative Thermal Oxidizer is comprised of the combustion chamber and heat exchanger. After leaving the combustion chamber, the exhaust gas enters a heat exchanger where it transfers heat to the waste gas through conduction. The waste gas is thus preheated.

Considerable fuel savings can be achieved by using the exhaust gas to preheat the incoming waste gas, combustion air, or both via a heat exchanger. These heat exchangers can recover up to 70% of the energy (enthalpy) in the product gas. Most heat exchangers are not designed to withstand high temperatures, so that most of the energy needed to reach ignition is supplied by the combustion of fuel in the combustion chamber and only moderate preheat temperatures are sought in practice (<1200^{o}F).

Regenerative Thermal Oxidizer: Regenerative Thermal Oxidizer consists of direct contact heat exchangers constructed of a ceramic material that can tolerate the high temperatures needed to achieve ignition of the waste stream.

The inlet gas first passes through a hot ceramic bed thereby heating the stream (and cooling the bed) to its ignition temperature. The hot gases then react (releasing energy) in the combustion chamber and while passing through another ceramic bed, thereby heating it to the combustion chamber outlet temperature. The process flows are then switched, now feeding the inlet stream to the hot bed. This cyclic process affords very high energy recovery (up to 95%). The higher capital costs associated with these high-performance heat exchangers and combustion chambers may be offset by the increased auxiliary fuel savings to make such a system economical.

Catalytic Oxidizers: Catalytic oxidation is also a widely used control technology to control pollutants where the waste gas is passed through a flame area and then through a catalyst bed for complete combustion of the waste in the gas. This technology is typically applied for destruction of organic vapors, nevertheless it is considered as a technology for controlling CO emissions. A catalyst is an element or compound that speeds up a reaction at lower temperatures compared to thermal oxidation without undergoing change itself. Catalytic oxidizers operate at 650°F to 1000°F and approximately require 1.5 to 2.0 ft^3 of catalyst per 1000 standard ft^3 per gas flow rate.

Step 2: Eliminate Technically Infeasible Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing CO emissions from emissions units at Evonik's BCM Operations. The control technologies listed in the previous section are discussed and evaluated below for their technical feasibility.

Thermal Oxidizers

Recuperative Thermal Oxidizer

Recuperative thermal oxidizers must operate at high temperatures to oxidize CO to CO2. Because of the low fuel value of CO, a significant amount of supplemental fuel would be required to operate a recuperative thermal oxidizer to achieve effective CO reductions, essentially rendering the technology infeasible for this use. Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a Recuperative Thermal Oxidizer is not a technically feasible option for the BCM Operation at this source.

Regenerative Thermal Oxidizer

Regenerative thermal oxidizers must operate at high temperatures to oxidize CO to CO2. Because of the low fuel value of CO, a significant amount of supplemental fuel would be required to operate a regenerative thermal oxidizer to achieve effective CO reductions, essentially rendering the technology infeasible for this use. Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of an additional Regenerative Thermal Oxidizer is not a technically feasible option for the BCM Operation at this source.

Catalytic Oxidizers

The concentration of carbon monoxide in the RTO exhaust is limited to no more than 73 ppm. At this low of a concentration and the high exhaust flow rate of the RTO, the supplemental fuel needs of a catalytic oxidizer to sustain temperatures needed to oxidize carbon monoxide are so substantial that at this concentration and flow rate, catalytic oxidation cannot even be considered a technically feasible emission control option for Evonik. Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a catalytic oxidizer is not a technically feasible option for the BCM Operation at this source.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

(1) Good Combustion practices for a Regenerative Thermal Oxidizer

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed CO BACT determination along with the existing CO BACT determinations for BCM Operations. All data in the table is based on the information obtained from the permit application submitted by Evonik Corporation Tippecanoe Laboratories, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

Company Name / Operation (RBLC Entry Number)	Process Description	Control Type	Control Efficiency
PROPOSED CO BACT FOR BCM Operations			
Evonik Corporation – Tippecanoe Laboratories (Proposed 157-34091-00006)	BCM Operation	RTO	73 ppmv
COMPARABLE BACT DETERMINATIONS (Pharmaceutical, Miscellaneous Chemical, and Specific Chemical Manufacturing)			
Evonik Corporation – Tippecanoe Laboratories (IN-0146)	BPM[1] Operation	RTO	73 ppmv[1]
Natureworks (NE-0043)	Polymer Production	Thermal oxidizer	90%
Hercules	Chemical Prep	Good combustion practices and CEMS	400 ppmvd

[1] The RBLC control efficiency incorrectly states that the RTO control efficiency is 73 ppmvdc. The Evonik Corporation Tippecanoe Laboratories Title V / PSD Flexible permit states that the RTO control efficiency is 73 ppmv.

Regulatory Limits: There are no regulatory limits for CO emissions for pharmaceutical operations, miscellaneous chemical manufacturing applicable units, or specific chemical manufacturing applicable units.

Permit Limits: The most stringent permit limit contained in the RBLC for a comparable unit is the existing BCM BACT limit of 73 ppmv.

Feasibility of Control Technology: CO emissions are generally controlled by good combustion practices on the Regenerative Thermal Oxidizer. IDEM concludes add-on controls are not feasible for this operation.

Based on these data, IDEM concludes that CO BACT for BCM operations is proper combustion to limit CO emissions to no more than 73 ppmv based on a 24-hourblock average.

Proposal: **Evonik Corporation Tippecanoe Laboratories** – Lafayette, IN

Following good combustion practices to limit CO emissions to 73 ppmv based on a 24-hour daily average has been proposed as BACT for CO for BCM Operations.

Step 5: Select BACT

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), IDEM, OAQ has determined the CO BACT for the BCM Operations is good combustion practices to limit CO emissions to no more than 73 parts per million by volume (ppmv) on a 24- hour block average.

Fluorides (F-) BACT – BCM Operations

Step 1: Identify Potential Control Technologies

The presence of halogens such as fluorine or chlorine in a fuel or waste stream exposed to high temperatures will result in the creation of acid gases such as hydrogen fluoride or hydrogen chloride. Fuel or process modifications may be possible to limit the quantity of these materials in fuel or process streams. Add-on controls may also be used to physically remove these materials from exhaust gases. Fluoride compounds tend to react with chemical reagents most rapidly, followed by chloride compounds and sulfur dioxide. The only available emission control systems for fluorides are caustic scrubbers.

Step 2: Eliminate Technically Infeasible Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing fluorides emissions from emissions units at BCM operation.

Fluorides Technologies Considered Feasible

Caustic scrubbing is a feasible control technology for fluorides, and therefore is not eliminated from consideration at this step of the BACT determination.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of sodium hydroxide (NaOH) injection to achieve at least 98 % control efficiency or no more than 20 ppmv HCl outlet concentration is the only viable technology for controlling fluorides (F-) emissions resulting from Evonik's BCM Operations.

(1) Sodium hydroxide (NaOH) Injection - 98% control efficiency

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed Fluoride BACT determination along with the existing Fluoride BACT determinations for BCM operations. All data in the table is based on the information obtained from the permit application submitted by Evonik Corporation Tippecanoe Laboratories, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

Limitations for Fluoride emissions from pharmaceutical and chemical operations are summarized below:

Company Name / Operation (RBLC Entry Number)	**Process Description**	**Control Type**	**Control Efficiency**
PROPOSED Fluorides BACT FOR BCM Operations			
Evonik Corporation – Tippecanoe Laboratories (Proposed 157-34091-00006)	BCM Operation	Caustic Scrubbing System	98% or 20 ppmv for pharmaceutical production; 99%, 20 ppmv or 0.45 lb/hr for miscellaneous chemical manufacturing; 95% or 0.45 lb/hr for synthetic organic chemical manufacturing.
Evonik Corporation – Tippecanoe Laboratories (IN-0146)	BCM Operation	Caustic Scrubbing System	98%, 20 ppmv
Cargill Fertilizer (FL-0259)	Phosphate Fertilizer Production, GTSP	3 medium energy venturi scrubbers	1.5 lb/hr
Cargill Fertilizer (FL-0259)	Phosphate Fertilizers Production, AP	3 medium energy venturi scrubbers	3 lb/hr
AGRIFOS Fertilizer	Phosphate Fertilizer Production	Fluoride emissions are controlled in the process itself	0.06 lb F/ton P2O5

Regulatory Limits: The most stringent requirements in each MACT standard are as follows:

Pharma MACT - 95% removal or 20 ppmv hydrogen halides and halogens

MON - 99% removal, 20 ppmv, or 0.45 lb/hr of hydrogen halide and halogens

HON - 95% removal or 0.45 kg/hr of hydrogen halide and halogens

Permit Limits: The most stringent permit limit contained in the RBLC for a comparable unit is the existing BACT limit for BCM of 98% removal or 20 ppmv of hydrogen halide and halogen emissions for pharmaceutical operations. There are no comparable limits for miscellaneous organic chemical manufacturing or specific chemical manufacturing operations.

Feasibility of Control Technology: Fluoride emissions may be controlled through the use of a scrubbing system.

Proposal: Evonik Corporation-Tippecanoe Laboratories - Lafayette, IN

(1) The following has been proposed as BACT for Fluorides for BCM Operations involving pharmaceutical production:

Caustic scrubbing to achieve 98% removal of hydrogen halide and halogen emissions or 20 ppmv hydrogen halides and halogens emissions over a 24 - hour average.

(2) The following has been proposed as BACT for Fluorides for BCM Operations involving miscellaneous organic chemical manufacturing operations:

99% removal efficiency, 20 ppmv hydrogen halide and halogens or 0.45 lb/hr hydrogen halide and halogens

(3) The following has been proposed as BACT for Fluorides for BCM Operations involving synthetic organic chemical manufacturing operations:

95% removal efficiency or 0.45 lb/hr hydrogen halide and halogens

These levels of control are as stringent as or more stringent than any limit contained in applicable rules or permits for comparable emission units.

Step 5: Select BACT

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), IDEM, OAQ has determined the Fluorides (F-) BACT for the BCM Operations as follows:

a) Caustic scrubbing to achieve at least 98% removal of hydrogen halide and halogen emissions or no more than 20 ppmv of hydrogen halide and halogen emissions based on a 24- hour daily average for pharmaceutical production;

b) Caustic scrubbing to achieve at least 99% removal of hydrogen halide and halogen emissions, no more than 20 ppmv hydrogen halides and halogen emissions (if CEMS is used, this is based on a 24-hour daily average), or no more than 0.45 lb/hr for miscellaneous chemical manufacturing operations; and

c) Caustic scrubbing to achieve at least 95% removal of hydrogen halide and halogen emissions or less than 0.45 lb/hr for synthetic organic chemical manufacturing operations.

Volatile Organic Compounds (VOC) BACT – BCM SUPPORT OPERATIONS

Under the flexible permit, only VOC emissions from BCM Support require BACT analysis under PSD regulations. VOC emissions from BCM Support are currently controlled through the use of the T79 fume incineration system by 98% (with the exception of one storage tank farm, which is controlled via the RTO System).

Recent actual point source VOC emissions are less than 3 tons per year (2011- 2013 average). Expected future actual point source VOC emissions from BCM Support are expected to remain less than 5 tons per year. A summary of proposed BACT levels for VOC emissions from BCM Support is provided in the following section.

Note that CO and fluorides are not emitted directly by BCM Support Operations. Therefore any physical change or change in the method of operation in BCM Support operations will not cause an increase in emissions from these units. Consequently, BACT controls are not required for these pollutants from these operations.

Step 1: Identify Potential Control Technologies

The potential control technologies for the BCM Support Operations are the same as those for the BCM Operations. The control technologies are described in Step 1 of the VOC BACT – BCM Operations section.

Step 2: Eliminate Technically Infeasible Options

Direct Incineration: Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of Direct Incineration is a technically feasible option for the BCM Support Operations at this source. It is the control system currently employed by Evonik.

Recuperative Thermal Oxidation: Evonik already employs a highly effective direct incineration system to reduce VOC emissions. The resulting concentration of VOCs in the exhaust stream are very low, well below the 1500 to 3000 ppm range necessary to support operation of an add-on recuperative thermal incineration without the use of an exorbitant amount of supplemental fuel. This would not be an appropriate control method for additional reduction of the low VOC exhaust stream from the BCM support.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a Recuperative Thermal Oxidation is not a technically feasible option for the BCM Support Operations at this source.

Regenerative Thermal Oxidation: Regenerative thermal oxidizers (RTOs) can handle variable and low-concentration VOC waste streams.

Evonik already employs a highly effective direct incineration system to reduce VOC emissions. The resulting concentration of VOCs in the exhaust stream are very low – 20 ppm or less, well below the range necessary to support operation of regenerative thermal incineration without the use of exorbitant amounts of supplemental fuel.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a Regenerative thermal oxidizer is not a technically feasible option for the BCM Support Operations at this source.

Recuperative and Regenerative Catalytic Oxidation: Catalytic oxidation can be used for low-concentration VOC waste streams; however, compounds present in waste stream gas may foul the catalyst.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a Recuperative and Regenerative Catalytic Oxidation is not a technically feasible option for the BCM Support Operations at this source.

Flares: While flares are designed to eliminate waste gas streams, they can cause safety and operational problems and the exhaust stream concentration must be high enough to sustain combustion. The exhaust stream from the BCM Support Operations is too low to sustain combustion in a flare.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a flare is not a technically feasible option for the BCM Support Operations at this source.

Reclamation Control Methods

Organic compounds may be reclaimed by one of three possible methods; adsorption, absorption (scrubbing) or condensation. In general, the organic compounds are separated from the emission stream and reclaimed for reuse or disposal. Depending on the nature of the contaminant and the inlet concentration of the emission stream, recovery technologies can reach efficiencies of 98%.

Adsorption: Adsorption is not typically used in pharmaceutical operations and based on the pollutant loading of the exhaust stream, adsorption is not considered technically feasible for the BCM Support operations as plugging of the adsorption media would likely occur. . In addition, the variety of solvents used by Evonik may result in emissions of ketones, which should not be controlled by carbon adsorption systems because of the heat generated when ketones are adsorbed by carbon.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of adsorption is not technically feasible option for the BCM Support Operations at this source.

Absorption: Absorption is not considered a technically feasible application for VOC control of emissions from the pharmaceutical operations due to the low concentration of VOC in the exhaust and the wide variety of solvents that may be emitted by Evonik..

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of absorption is not technically feasible option for the BCM Support Operations at this source.

Condensation: Condensers are not considered technically feasible for the application of controlling VOC emissions from the Evonik BCM Support Operations due to the low concentration of VOC in the exhaust.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of condensation is not technically feasible option for the BCM Support Operations at this source.

Combinations of Reclamation and Destruction Control Methods

Because none of the reclamation based technologies are technically feasible or appropriate for a low concentration, variable content emission stream like Evonik's, combinations of reclamation and destruction control methods are not technically feasible at Evonik. Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a Combination of Reclamation and Destruction Control Methods is not a technically feasible option for the BCM Support Operations at this source.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of Direct Incineration with 98 % control efficiency is the only viable technology for controlling VOC emissions resulting from the BCM Support Operations at Evonik.

(1) Direct Incineration - 98% destruction efficiency.

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed VOC BACT determination along with the existing VOC BACT determinations for operations similar to BCM Support Operations. All data in the table is based on the information obtained from the permit application submitted by Evonik Corporation Tippecanoe Laboratories, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

Company Name / Operation	Process Description	Control Type	Control Efficiency
PROPOSED VOC BACT FOR BCM Support Operations Point Source Emissions			
Evonik Corporation, Tippecanoe Laboratories - Lafayette, IN (Proposed 157-34091-00006)	BCM Support Operations	T79 Fume Incinerator	98% control of VOC/VOHAP or 20 ppmv based on 24-hour average
COMPARABLE BACT DETERMINATIONS (Pharmaceutical, Miscellaneous Chemical, and Specific Chemical Manufacturing)			
Eli Lilly and Company – Clinton Labs (IN-0144)	Narasin Fermentation	None	100 ton/yr (control efficiency not provided)
Eli Lilly and Company – Clinton Labs (IN-0144)	Narasin Recovery Operation	Carbon Adsorption	98%
Eli Lilly and Company – Clinton Labs (IN-0144)	Narasin Finishing Operation	Carbon Adsorption	98%
Eli Lilly and Company – Clinton Labs (IN-0144)	Other Narasin Recovery Operation	None	None
Eli Lilly and Company – Clinton Labs (IN-0144)	Evaporator	Carbon Adsorption	98%
Evonik Degussa Corporation – Tippecanoe Laboratories (IN-0146)	BPM* Operations D.6	RTO	98% or 20 ppmv
Evonik Degussa Corporation – Tippecanoe Laboratories (IN-0146)	BPM* Support Operations D.9/10	Incineration System	98%
Merck and Co. (Cherokee) (PA-0265)	Pharmaceutical Manufacturing	Scrubbers and Incinerator	82.14 ton/yr (control efficiency not provided)
Archer Daniels Midland (IA-0088)	Dry Germ Storage Silo		20 ppmv

Company Name / Operation	Process Description	Control Type	Control Efficiency
Archer Daniels Midland (IA-0088)	Indirect-Fired DDGS Dryer	Gasses through the dryer's combustion chamber	98%
Archer Daniels Midland (IA-0088)	Germ Dryers and Coolers	Wet Scrubber	7.5 ppmvd
Archer Daniels Midland (IA-0088)	Wastewater Treatment Plant Aeration Tank		20 ppmvd
Archer Daniels Midland (IA-0088)	Wastewater Treatment Plant Anaerobic Digester	Enclosed flare	98%
Archer Daniels Midland (IA-0088)	Fermentation, Distillation, and Dehydration	CO2 scrubber, distillation NCG scrubber, RTO	98%
Archer Daniels Midland (IA-0088)	Dry Feed Storage Silo		20 ppmvd
Homeland Energy Solutions (IA_0089)	Biomethanator Flare		98%
Homeland Energy Solutions (IA-0089)	Fermenters and Beerwell	Scrubber	97%
Aventine Renewable Energy (IL-0102)	Miscellaneous Units		100 ppm
New Energy Corporation (IN-0122)	DDGS Cooler System	RTO	98%
Bio-Alternative (IN-0123)	Biodiesel Production Plant	Final vent condenser and scrubber	98%
Swift Fuels (IN-0153)	Mesitylene Processing Skid	Open flare	98%
(MN-0062)	DGS Drying Operation	Thermal oxidizer	95%
Red Trail Energy (ND-0020)	DDGS Cooling		20 ppmv
Red Trail Energy (ND-0020)	Ethanol Storage Tanks	Internal floating roof	95%
Natureworks (NE-0043)	Polymer Production	Thermal oxidizer	98%
Aventine Renewable Energy (NE-0046)	Pre-Fermentation, Distillation, and DGS Drying Operations	RTO	99%, 50 ppmvd
Flopam (LA-0240)	Thermal Oxidizers	RTO	99%
Flopam (LA-0240)	DADMAC/CM/ADAM/ATBS Plants	Thermal oxidizers	99%
Avoca (NC-0111)	Recovery Operation Wastewater Tanks and Other Similar Operations	Fixed roofs and biological treatment	95%

Company Name / Operation	Process Description	Control Type	Control Efficiency
Aventine Renewable Energy (NE-0046)	Pre-Fermentation, Distillation, and DGS Drying Operations	RTO	99%, 50 ppmvd
Red Trail Energy (ND-0020)	DDGS Cooling		20 ppmv
Red Trail Energy (ND-0020)	Ethanol Storage Tanks	Internal floating roof	95%
Swift Fuels (IN-0153)	Mesitylene Processing Skid	Open flare	98%

The most stringent VOC emission limitations contained in the Comparable BACT Determinations table are 99% reduction and 7.5 ppm, which are associated with chemical operations.

In evaluating BACT for VOC control of chemical operations, it is important to note that the control efficiency anticipated for a given emission unit/control equipment combination is dependent upon the uncontrolled VOC emission rate of the emission unit. Even though a unit may be listed with high control efficiency in the RBLC, the same control equipment would be expected to have lower control efficiency if the uncontrolled emission rate is lower. Evonik has focused its BACT evaluation on the extent to which the selected control equipment corresponds to the control equipment type utilized at the best-controlled facility identified in RBLC.

The Archer Daniels Midland (ADM) Facility has a BACT limit of 7.5 ppmvd of VOC. This limit is specific to the germ dryer and cooler at the ADM facility. However, all other operations in the Archer Midland Daniels permit have a limit of 20 ppm or 98% control. In addition, germ dryers typically operate with a single feed and product streams, providing a more consistent emissions profile that is controlled by a wet scrubber. On the other hand, the incinerators at Evonik must be able to control a wide range of emission stream profiles due to differences in VOC and HAP emissions from several different types of unit operations operating at any given time. Since the Evonik limit will apply to all unit operations in BCM and BCM support, the 20 ppm and 98% for other ADM operations is more reflective of the collection of all VOC BACT.

The Aventine Renewable Energy Facility proposes a BACT of 99% and 50 ppmvd. Although the control efficiency is more stringent at 99% as compared to the currently permitted 98% at Evonik, the outlet concentration of 50 ppmvd for the Aventine Facility is less stringent than 20 ppm, the current BACT limit at Evonik. Therefore, the Aventine VOC limit is not established to be more stringent than the limits proposed for Evonik.

The Flopam Facility proposes a BACT limit of 99% control efficiency. Compliance with 99% control efficiency would require installation of new control devices. As described above, direct incineration is the only feasible option for Evonik's BCM Support Operations.

After excluding these operations, the 98% control or 20 ppmv are representative of the most stringent limits in the RBLC, which is the limit proposed for the flexible permit.

Evonik asserts that the limit proposed in its BACT analysis represents the lowest limit that a direct incineration unit is reasonably capable of meeting for multi-facility, multi-product emission streams. In order for Evonik to meet an emission rate comparable to that required for Flopam, a new RTO would have to be added to the existing control system for BCM Support Operations. Given the low level of additional VOC removal that this would provide (in comparison with estimated capital and operating costs), IDEM, OAQ concludes that this option would not be considered to be BACT for this unit. Since this unit is not comparable to the Evonik operation, the most stringent applicable limit for VOC emissions from pharmaceutical and chemical operations is the BACT limit for BCM Support Operations contained in the original Flexible Permit.

Regulatory Limits: The most stringent VOC emission limitation applicable by rule to this emission unit is the pharmaceutical MACT, SOCMI, and MON standards. The most stringent MACT standard requires organic HAP emissions to be controlled by 98% or to 20 ppmv VOC. Please note that the HON specifies that the 20 ppmv shall be calculated on a dry basis, corrected to 3% oxygen. These rules also contain requirements for leak detection and repair programs for components in organic HAP service. There are no emission limits for similar sources that would create any more stringent emission limits for pharmaceutical, miscellaneous chemical manufacturing, or SOCMI operations.

Permit Limits: The most stringent permit limit contained in the RBLC for a comparable unit is the existing BACT limit for BCM support of 98% control or 20 ppmv.

Feasibility of Control Technology: VOC emissions are currently controlled through the use of the T79 fume incineration system and one storage tank, T146 is controlled via the RTO. VOC emissions may be controlled by a variety of control technologies, however, there is no technology that would be expected to achieve an overall control efficiency (or outlet VOC emission rate) more stringent than that contained in the MACT standards.

Evonik also proposes an alternative for BCM Support Individual Drain Systems (IDS) such that IDS may be controlled via a closed-vent system with vapors routed to the direct incineration unit or IDS may be designed with a water seal or tightly fitting cap.

(a) **Proposal**: **Evonik Corporation - Tippecanoe Laboratories** – Lafayette, IN
The following has been proposed as BACT for VOC for BCM Support:

(a) VOC point source emissions: 98% control of VOC emissions or to 20 ppmv of VOC.

Step 5: Select BACT

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD)), IDEM, OAQ has determined the VOC BACT for the BCM Support Operations as follows:

a) The BCM Support Operation shall use direct incineration or regenerative thermal oxidation to control VOC point source emissions to control VOC emissions to a volumetric concentration of no more than 20 parts per million (ppmv) based on a 24-hour daily average or reduce VOC emissions by a control efficiency of 98% or more.

Volatile Organic Compounds (VOCs) BACT – T49 Waste Incinerator

Step 1: Identify Potential Control Technologies

T49 is a liquid waste incinerator designed to destroy organic compounds at greater than 99.99% or better. As a result, the remaining organic compound emissions are extremely low. No add-on control technology has been identified as a potential emission control technology for a liquid waste incinerator.

Proper design and good combustion practices that assures 99.99% destruction efficiency is the most widely used practice to minimize VOC emissions from a liquid waste incinerator.

Step 2: Eliminate Technically Infeasible Options

As the only available emission controls, design and good combustion practices have been shown to be technically feasible.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the good combustion practice and compliance with CO limit is the only viable technology for controlling VOC emissions resulting from the Waste incinerator at the Evonik Corporation, Tippecanoe Laboratories.

Step 4: Evaluate the Most Effective Controls and Document the Results

Company Name / Operation	Process Description	Control Type	Control Efficiency
PROPOSED VOC BACT FOR T49 LIQUID WASTE INCINERATION			
Evonik Corporation – Tippecanoe Laboratories (Proposed T157-34091-00006)	T49 Liquid Waste Incinerator	Combustion controls	Hydrocarbon (HC) emission limit of 10 ppmvdc or CO emission limit of 100 ppmvdc as a surrogate for HC
COMPARABLE VOC BACT DETERMINATIONS			
Palm Beach Renewable Energy Park (FL-0324)	Three Municipal Solid Waste Combustors (MSW)	CEMS & air cooled condenser	7 ppmvd, 5lb/hr
City of Harrisonburg Resource Recovery Facility (VA-0297)	Resource Recovery – Waste Combustion	Proper operation and maintenance	0.23 lb/hr, 1.97 tpy
City of Harrisonburg Resource Recovery Facility (VA-0297)	Resource Recovery – Waste Combustion	Proper operation and maintenance	0.38 lb/hr, 0.82 tpy
Evonik Corporation – Tippecanoe Laboratories (Permit T157-26575-00006)	T49 Liquid Waste Incinerator	Combustion controls	Hydrocarbon (HC) emission limit of 10 ppmvdc or CO emission limit of 100 ppmvdc as a surrogate for HC
Evonik Corporation – Tippecanoe Laboratories (Permit T157-26575-00006)	T149 Solid-Liquid Waste Incinerator	Combustion Controls	Hydrocarbon (HC) emission limit of 10 ppmvdc or CO emission limit of 100 ppmvdc as a

			surrogate for HC

The most stringent limit is 7 ppmvd VOC at the Palm Beach Renewable Energy Park. This limit is for three solid waste combustors, which do not handle solvent waste. The incinerators at Evonik operate differently than these combustors because T49 is a liquid incinerator and T149 is a solid-liquid incinerator that do not combust municipal waste, which is the sole waste specified for the Palm Beach BACT VOC limit. The percentage of VOC in municipal solid waste is very low whereas the VOC loading to the T49 and T149 incinerators is much higher and is therefore not an equivalent operational comparison. Therefore, Evonik does not believe the Palm Beach BACT limit can be applied to the incinerators at Tippecanoe Laboratories. The most stringent relevant limit applicable for the BACT is the proposed limit for the flexible permit.

Regulatory Limits: The hazardous waste incineration MACT standard (Subpart EEE) limits Total Hydrocarbon (THC) emission to 10 ppmvdc or requires CO emission control to 100 ppmvdc as a surrogate for THC and requires a destruction removal efficiency (DRE) for organic materials of 99.99% for each principle organic hazardous constituent.

Permit Limits: The only entries in the RBLC that contained limitations on VOC from comparable incineration operations were for T49 and T149 at Evonik. The existing Flexible Permit specifies that BACT for VOC emissions from T49 is compliance with the 10 ppmv HC limit by meeting the surrogate CO limit of 100 ppmvdc.

Feasibility of Control Technology: VOC emissions are greatly reduced in incineration operations through the use of good combustion. Add-on control systems are not feasible for combustion operations with low VOC concentrations.

There were no listings in the RBLC that contained stack limitations or concentration limits for VOC emissions from liquid waste incineration operations. The RBLC did contain listings that contained DRE requirements for requirements, with most DRE requirements at 99.99%. The existing Flexible Permit specifies that BACT for VOC emissions from T49 is compliance with the CO limit of 100 ppmvdc, which EPA has determined is equivalent to 10 ppm of HC.

(a) **Proposal**: **Evonik Corporation, Tippecanoe Laboratories** – Lafayette, IN
The following has been proposed as BACT for VOC for Waste Incineration (T49 liquid waste incinerator):

(1) VOC: Good combustion practice and compliance with the 10 ppmvdc HC or surrogate CO limit of 100 ppmvdc.

Step 5: Select BACT

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), IDEM, OAQ has determined the VOC BACT for the T49 shall be good combustion practices and no more than 10 ppmv hydrocarbon dry corrected to 7% oxygen or no more than 100 ppmv dry corrected to 7% oxygen rolled on an hourly basis CO limit.

Carbon Monoxide (CO) BACT - T49 Waste Incinerator

Step 1: Identify Potential Control Technologies

Carbon Monoxide (CO) is formed through the incomplete oxidation of organic material to carbon dioxide (CO2). Factors that may lead to the formation of carbon monoxide include inadequate air flow rates, inadequate mixing of air and fuel, and improper temperatures in combustion zones. CO emission control is achieved by design optimization in combustion equipment to minimize CO formation or by the use of add-on control units that will facilitate the further oxidation of CO to CO2.

Good Combustion Practices

Combustion equipment design focuses on proper air to fuel ratios, good mixing of air and fuel, and control of combustion chamber temperatures to minimize CO emissions. In situations where CO is generated by process activities (such as chemical reactions) or where combustion equipment design are inadequate to achieve the desired level of control, add-on- controls may be necessary to limit CO emissions. Add-on-control equipment for CO includes thermal or catalytic oxidation techniques to convert CO to CO_2. The choice of controls is based upon several factors, including the degree of control desired, the concentration of carbon monoxide in the air stream, and other physical characteristics of the air stream (including the presence of other pollutants).

Oxidation Catalyst

An oxidation catalyst uses a precious metal based catalyst to promote the oxidation of CO to $CO_{2.}$ The oxidation of CO to CO_2 utilizes the excess air present in the gases; the activation energy required for the reaction to proceed is lowered in the presence of the catalyst. Technical factors relating to this technology include catalyst reactor design, optimum-operating temperature, back-pressure loss to the system and catalyst life. Oxidation catalyst reactors operate in a temperature range of 700^{o}F to 900^{o}F. At temperature lower that this range CO conversion to CO_2 reduces rapidly. Cost of an oxidation catalyst can be high with the largest cast associated with the catalyst itself. Catalyst life varies, but typically a 3 to 6 year life can be expected.

Step 2: Eliminate Technically Infeasible Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing CO emissions from the T49 waste incinerator.

Good Combustion Practices

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of Good Combustion Practices is a technically feasible option for the T49 Waste Incineration at this source.

Oxidation Catalyst

Waste incineration can create a variety of particulates and organic pollutants that are present in small amounts. These particulates would likely cause fouling or contamination of the catalyst and thus render catalytic oxidation infeasible. Application of catalytic oxidation after particulate matter emission controls would also be technically infeasible. Particulates are controlled with highly effective liquid scrubbing systems which reduces the temperature of the exhaust stream significantly and adds a high quantity of moisture to the exhaust. In order to raise exhaust temperatures so that catalytic oxidation would be effective would require reheating of the exhaust stream and an extreme amount of supplemental fuel usage. Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of oxidation catalyst is not a technically feasible option for the T49 Waste Incineration at this source.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the good combustion practice to control CO emissions to 100 ppmvdc based on a 1-hour rolling average is the only viable technology for controlling CO emissions resulting from the T49 Waste Incinerator at Evonik Corporation Tippecanoe Laboratories.

Step 4: Evaluate the Most Effective Controls and Document the Results

Company Name / Operation	Process Description	Control Type	Control Efficiency
PROPOSE CO BACT FOR T49 LIQUID WASTE INCINERATION			
Evonik Corporation – Tippecanoe Laboratories (Proposed T157-34091-00006)	T49 Liquid Waste Incinerator	Combustion Controls	100 ppmvdc
COMPARABLE CO BACT DETERMINATIONS			
Shintech Louisiana, LLC (LA-0242)	Hydrochloric Acid Production Furnace 2	Good combustion design and good combustion practices	0.089 lb/MMBtu, 4.16 lb/hr
Shintech Louisiana, LLC LA-0243	Hydrochloric Acid Production Furnace 1	Good combustion design and good combustion practices	0.089 lb/MMBtu, 3.46 lb/hr
Hillsborough County Resource Recovery Facility (FL-0284)	Municipal Waste Combustion	Good combustion practices	80 ppmvd 30 day rolling average or 100 ppmvd 4-hr average
Okeechobee Landfill (FL-0321)	15 MW Solar Titan 130	None	100 ppmvd @ 15% O_2
Okeechobee Landfill (FL-0321)	3.5 MW Solar Centaur	None	250 ppmvd
Palm Beach Renewable Energy Park (FL-0324)	Three Municipal Solid Waste Combustors (MSW)	Annual testing requirement	100 ppmvd
City of Harrisonburg Resource Recovery Facility (VA-0297)	Resource Recovery – Waste Combustion	CEMS and good combustion practices	100 ppm @ 7% O_2

City of Harrisonburg Resource Recovery Facility (VA-0297)	Resource Recovery – Waste Combustion	CEMS and good combustion practices	3.56 lb/hr, 30.21 ton/yr and 3.3 lb/MMBtu
City of Harrisonburg Resource Recovery Facility (VA-0297)	Resource Recovery – Waste Combustion	Proper operation and maintenance	1.02 lb/hr, 2.24 ton/yr and 0.94 lb/MMBtu
Evonik Corporation – Tippecanoe Laboratories (Permit T157-26575-00006)	T49	Combustion Controls	100 ppmvdc
Evonik Corporation – Tippecanoe Laboratories (Permit T157-26575-00006)	T149	Combustion Controls	100 ppmvdc

The units summarized generally are limited to 100 ppm of CO, which is the same limit contained in the flexible permit for Evonik. The Hillsborough Facility limit of 80 ppmvd is lower than the proposed limit of 100 ppm however; the averaging period for this limit is 30 days. Meanwhile, the 4-hour average limit of 100 ppmvd is less stringent than the short-term limit proposed by Evonik, which applies on a 1-hour rolling average. Therefore, the proposed Evonik CO limit is more stringent.

Regulatory Limits: The Hazardous Waste Combustor MACT standards within 40 CFR Part 63, Subpart EEE limit CO emissions to 100 ppmvdc based on a 1-hour rolling average (or HC emissions to 10 ppmvdc).

Permit Limits: There are a few CO limits in RBLC for hazardous waste incinerators and other waste incinerators. The most stringent CO emission limit contained in the RBLC for incineration is 100 ppmvdc. The existing Flexible Permit specifies that BACT for T49 is 100 ppmvdc.

Feasibility of Control Technology: CO emissions are generally controlled by proper combustion techniques. Add-on controls are not appropriate for the control of CO emissions from incineration.

The CO BACT for the T49 incinerator has proper combustion to limit CO emissions to no more than 100 ppmvdc, based on a 1-hour rolling average. This is equivalent to the CO MACT limit contained in 40 CFR Part 63, Subpart EEE.

Step 5: Select BACT

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), IDEM, OAQ has determined the CO BACT for T49 shall be good combustion practices and no more than 100 ppmv dry corrected to 7% oxygen rolled on an hourly basis for CO emissions.

Fluorides (F-) BACT – T49 Waste incinerator

Step 1: Identify Potential Control Technologies

The presence of halogens such as fluorine or chlorine in a fuel or waste stream exposed to high temperatures will result in the creation of acid gases such as hydrogen fluoride or hydrogen chloride. Fluoride and chloride emissions are generally controlled in much the same manner as chloride emissions which are generally controlled in much the same manner as for sulfur dioxide. Fuel or process modifications may be possible to limit the quantity of these materials in fuel or process streams. Add-on controls may also be used to physically remove these materials from exhaust gases. Systems used to control sulfur dioxide emissions will also capture and control halogen emissions. Fluoride compounds tend to react with chemical reagents most rapidly, followed by chloride compounds and sulfur dioxide. Thus, a control system for sulfur dioxide will by its nature remove most fluoride and chloride compounds.

Fluoride emissions are typically controlled by scrubbers containing a caustic solution to neutralize the acidity of the fluorides.

Step 2: Eliminate Technically Infeasible Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing fluorides emissions from the waste incinerator.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a fluorides technology is a technically feasible option for the T49 Waste Incinerator.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of caustic scrubbing with sodium hydroxide (NaOH) to achieve an outlet concentration of no more than 32 ppmv hydrogen chloride and chlorine gas (total chlorine) dry corrected to 7% oxygen, expressed as $Cl^{(-)}$ equivalent is the only viable technology for controlling Fluorides (F-) emissions resulting from the Waste incinerator at Evonik Corporation Tippecanoe Laboratories.

Sodium hydroxide (NaOH) Injection - Outlet concentration of no more than 32 ppmvdc HCl/Cl2 (as a surrogate for F-)

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed Fluorides BACT determination along with the existing Fluoride (F-) BACT determinations for Waste Incineration. All data in the table is based on the information obtained from the permit application submitted by Evonik Corporation Tippecanoe Laboratories, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

Company Name / Operation	Process Description	Control Type	Control Efficiency
PROPOSED FLUORIDES BACT FOR T49			
Evonik Corporation, Tippecanoe Laboratories - Lafayette, IN (Proposed 157-34091-00006)	T49 Liquid Waste Incinerator	NaOH Injection	32 ppmvdc HCl/Cl2

Company Name / Operation	Process Description	Control Type	Control Efficiency
COMPARABLE FLUORIDES BACT DETERMINATIONS			
Evonik Corporation – Tippecanoe Laboratories (Permit T157-26575-00006)	T49	NaOH Injection	98% Control of HCl
Evonik Corporation – Tippecanoe Laboratories (Permit T157-26575-00006)	T149	NaOH Injection	98% Control of HCl

Aside from Evonik, there are no permit limits in RBLC for fluoride emissions from hazardous waste combustion units. The existing Flexible Permit specifies that BACT for fluoride emissions from T49 is 98% control of HCl emissions, which corresponds to an outlet concentration of 77 ppmvdc HCl (used as a surrogate for F-). The current Hazardous Waste Combustor MACT (40 CFR Part 63, Subpart EEE) HCl/Cl2 limit of 32 ppmvdc is more stringent than the 98% control of HCl that corresponds to 77 ppmvdc HCl.

Regulatory Limits: There are no regulatory limits for fluoride emissions that are applicable to hazardous waste incinerators. The combined hydrogen chloride/chlorine limit from hazardous waste incinerators (40 CFR Part 63, Subpart EEE) is 32 ppmvdc for existing units.

Permit Limits: The existing Flexible Permit specifies that BACT for fluoride emissions from T49 is caustic scrubbing with NaOH to achieve 98% removal efficiency of HCl, which corresponds to an outlet concentration of 77 ppmvdc.

Feasibility of Control Technology: Fluoride emissions may be controlled through the use of a wet or dry scrubbing system.

Proposal: **Evonik Corporation, Tippecanoe Laboratories** – Lafayette, IN
The following has been proposed as BACT for Fluorides for the Waste Incineration (T49 liquid Waste incineration) is:

Caustic scrubbing with NaOH to achieve an outlet concentration of no more than 32 ppmv hydrogen chloride and chlorine gas (total chlorine) dry corrected to 7% oxygen expressed as a chloride ($Cl^{(-)}$) equivalent.

Step 5: Select BACT
Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), IDEM, OAQ has determined the Fluorides (F-) BACT to be as follows:

Caustic scrubbing with NaOH to achieve an outlet concentration of no more than 32 ppmv hydrogen chloride and chlorine gas (total chlorine) dry corrected to 7% oxygen, expressed as $Cl^{(-)}$ equivalent, which is equivalent to the MACT HCl and Cl_2 limit for existing sources contained in 40 CFR Part 63 Subpart EEE [63.1219(a)(6)].

Volatile Organic Compounds (VOCs) BACT – 149 Solid-Liquid Waste Incinerator

Step 1: Identify Potential Control Technologies

The potential control technologies for the T149 Solid-Liquid Waste Incinerator are the same as those for the T49 Liquid Waste Incinerator. Refer to Step 1 of the Volatile Organic Compounds (VOC) BACT for the T49 Waste Incinerator.

Step 2: Eliminate Technically Infeasible Options

As the only available emission controls, design and good combustion practices have been shown to be technically feasible.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the good combustion practice and compliance with CO limit is the only viable technology for controlling VOC emissions resulting from the Waste incinerator at the Evonik Corporation, Tippecanoe Laboratories.

Step 4: Evaluate the Most Effective Controls and Document the Results

Company Name / Operation	Process Description	Control Type	Control Efficiency
PROPOSED VOC BACT FOR T149 LIQUID WASTE INCINERATION			
Evonik Corporation – Tippecanoe Laboratories (Proposed T157-34091-00006)	T149 Solid-Liquid Waste Incinerator	Combustion controls	Hydrocarbon (HC) emission limit of 10 ppmvdc or CO emission limit of 100 ppmvdc as a surrogate for HC
COMPARABLE VOC BACT DETERMINATIONS			
Palm Beach Renewable Energy Park (FL-0324)	Three Municipal Solid Waste Combustors (MSW)	CEMS & air cooled condenser	7 ppmvd, 5lb/hr
City of Harrisonburg Resource Recovery Facility (VA-0297)	Resource Recovery – Waste Combustion	Proper operation and maintenance	0.23 lb/hr, 1.97 tpy
City of Harrisonburg Resource Recovery Facility (VA-0297)	Resource Recovery – Waste Combustion	Proper operation and maintenance	0.38 lb/hr, 0.82 tpy
Evonik Corporation – Tippecanoe Laboratories (Permit T157-26575-00006)	T49 Liquid Waste Incinerator	Combustion controls	Hydrocarbon (HC) emission limit of 10 ppmvdc or CO emission limit of

			100 ppmvdc as a surrogate for HC
Evonik Corporation – Tippecanoe Laboratories (Permit T157-26575-00006)	T149 Solid-Liquid Waste Incinerator	Combustion Controls	Hydrocarbon (HC) emission limit of 10 ppmvdc or CO emission limit of 100 ppmvdc as a surrogate for HC

The most stringent limit is 7 ppmvd VOC at the Palm Beach Renewable Energy Park. This limit is for three solid waste combustors, which do not handle solvent waste. The incinerators at Evonik operate differently than these combustors because T49 is a liquid incinerator and T149 is a solid-liquid incinerator that do not combust municipal waste, which is the sole waste specified for the Palm Beach BACT VOC limit. The percentage of VOC in municipal solid waste is very low whereas the VOC loading to the T49 and T149 incinerators is much higher and is therefore not an equivalent operational comparison. Therefore, Evonik does not believe the Palm Beach BACT limit can be applied to the incinerators at Tippecanoe Laboratories. The most stringent relevant limit applicable for the BACT is the proposed limit for the flexible permit.
Regulatory Limits: The hazardous waste incineration MACT standard (Subpart EEE) limits Total Hydrocarbon (THC) emission to 10 ppmvdc or requires CO emission control to 100 ppmvdc as a surrogate for THC and requires a destruction removal efficiency (DRE) for organic materials of 99.99% for each principle organic hazardous constituent.

Permit Limits: The only entries in the RBLC that contained limitations on VOC from comparable incineration operations were for T49 and T149 at Evonik. The existing Flexible Permit specifies that BACT for VOC emissions from T49 is compliance with the 10 ppmv HC limit by meeting the surrogate CO limit of 100 ppmvdc.

Feasibility of Control Technology: VOC emissions are greatly reduced in incineration operations through the use of good combustion. Add-on control systems are not feasible for combustion operations with low VOC concentrations.

There were no listings in the RBLC that contained stack limitations or concentration limits for VOC emissions from liquid waste incineration operations. The RBLC did contain listings that contained DRE requirements for requirements, with most DRE requirements at 99.99%. The existing Flexible Permit specifies that BACT for VOC emissions from T149 is compliance with the CO limit of 100 ppmvdc, which EPA has determined is equivalent to 10 ppm of HC.

(a) **Proposal**: **Evonik Corporation, Tippecanoe Laboratories** – Lafayette, IN
The following has been proposed as BACT for VOC for Waste Incineration (T149 solid-liquid waste incinerator):

(1) VOC: Good combustion practice and compliance with the 10 ppmvdc HC or surrogate CO limit of 100 ppmvdc.

Step 5: Select BACT
Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), IDEM, OAQ has determined the VOC BACT for the T149 shall be good combustion practices and no more than 10 ppmv hydrocarbon dry corrected to 7% oxygen or no more than 100 ppmv dry corrected to 7% oxygen rolled on an hourly basis CO limit.

Carbon Monoxide (CO) BACT - T149 Solid-Liquid Waste Incinerator

Step 1: Identify Potential Control Technologies

The potential control technologies for the T149 Solid-Liquid Waste Incinerator are the same as those for the T49 Liquid Waste Incinerator. Refer to Step 1 of the Carbon Monoxide (CO) BACT for the T49 Waste Incinerator.

Step 2: Eliminate Technically Infeasible Options

Good Combustion Practices
Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of Good Combustion Practices is a technically feasible option for the T149 Rotary Kiln Incinerator at this source.

Oxidation Catalyst
Waste incineration can create a variety of particulates and organic pollutants that are present in small amounts. These particulates would likely cause fouling or contamination of the catalyst and thus render catalytic oxidation infeasible. Application of catalytic oxidation after particulate matter emission controls would also be technically infeasible. Particulates are controlled with highly effective liquid scrubbing systems which reduces the temperature of the exhaust stream significantly and adds a high quantity of moisture to the exhaust. In order to raise exhaust temperatures so that catalytic oxidation would be effective would require reheating of the exhaust stream and an extreme amount of supplemental fuel usage.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of oxidation catalyst is not a technically feasible option for the T149 Rotary Kiln Incinerator at this source.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the good combustion practice to control CO emissions to 100 ppmvdc based on a 1-hour rolling average is the only viable technology for controlling CO emissions resulting from the T149 Waste Incinerator at Evonik Corporation Tippecanoe Laboratories.

Step 4: Evaluate the Most Effective Controls and Document the Results

Company Name/ Operation	**Process Description**	**Control Type**	**Control Efficiency**
PROPOSE CO BACT FOR T149 SOLID-LIQUID WASTE INCINERATION			
Evonik Corporation – Tippecanoe Laboratories (Proposed T157-34091-00006)	T149 Liquid Waste Incinerator	Combustion Controls	100 ppmvdc
COMPARABLE CO BACT DETERMINATIONS			

Shintech Louisiana, LLC (LA-0242)	Hydrochloric Acid Production Furnace 2	Good combustion design and good combustion practices	0.089 lb/MMBtu, 4.16 lb/hr
Shintech Louisiana, LLC LA-0243	Hydrochloric Acid Production Furnace 1	Good combustion design and good combustion practices	0.089 lb/MMBtu, 3.46 lb/hr
Hillsborough County Resource Recovery Facility (FL-0284)	Municipal Waste Combustion	Good combustion practices	80 ppmvd 30 day rolling average or 100 ppmvd 4-hr average
Okeechobee Landfill (FL-0321)	15 MW Solar Titan 130	None	100 ppmvd @ 15% O_2
Okeechobee Landfill (FL-0321)	3.5 MW Solar Centaur	None	250 ppmvd
Palm Beach Renewable Energy Park (FL-0324)	Three Municipal Solid Waste Combustors (MSW)	Annual testing requirement	100 ppmvd
City of Harrisonburg Resource Recovery Facility (VA-0297)	Resource Recovery – Waste Combustion	CEMS and good combustion practices	100 ppm @ 7% O_2
City of Harrisonburg Resource Recovery Facility (VA-0297)	Resource Recovery – Waste Combustion	CEMS and good combustion practices	3.56 lb/hr, 30.21 ton/yr and 3.3 lb/MMBtu
City of Harrisonburg Resource Recovery Facility (VA-0297)	Resource Recovery – Waste Combustion	Proper operation and maintenance	1.02 lb/hr, 2.24 ton/yr and 0.94 lb/MMBtu
Evonik Corporation – Tippecanoe Laboratories (Permit T157-26575-00006)	T49	Combustion Controls	100 ppmvdc
Evonik Corporation – Tippecanoe Laboratories (Permit T157-26575-00006)	T149	Combustion Controls	100 ppmvdc

The units summarized generally are limited to 100 ppm of CO, which is the same limit contained in the flexible permit for Evonik. The Hillsborough Facility limit of 80 ppmvd is lower than the proposed limit of 100 ppm however; the averaging period for this limit is 30 days. Meanwhile, the 4-hr average limit of 100 ppmvd is less stringent than the short-term limit proposed by Evonik, which applies on a 1 hour rolling average. Therefore, the proposed Evonik CO limit is more stringent.

Regulatory Limits: The Hazardous Waste Combustor MACT standards within 40 CFR Part 63, Subpart EEE limit CO emissions to 100 ppmvdc based on a 1-hour rolling average (or HC emissions to 10 ppmvdc).

Permit Limits: There are a few CO limits in RBLC for hazardous waste incinerators and other waste incinerators. The most stringent CO emission limit contained in RBLC for incineration is 100 ppm. The existing Flexible Permit specifies that BACT for CO emissions from T149 is 100 ppmvdc.

Feasibility of Control Technology: CO emissions are generally controlled by proper combustion techniques. Add-on controls are not appropriate for the control of CO emissions from incineration.

The CO BACT for the T149 incinerator has proper combustion to limit CO emissions to no more than 100 ppmvdc, based on a 1-hour rolling average. This is equivalent to the CO MACT limit contained in 40 CFR Part 63, Subpart EEE.

Step 5: Select BACT

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), IDEM, OAQ has determined the CO BACT for T149 shall be good combustion practices and no more than 100 ppmv dry corrected to 7% oxygen rolled on an hourly basis for CO emissions.

Fluorides (F-) BACT – T149 Solid-Liquid Waste Incinerator

Step 1: Identify Potential Control Technologies

The potential control technologies for the T149 Solid-Liquid Waste Incinerator are the same as those for the T49 Liquid Waste Incinerator. Refer to Step 1 of the Fluorides (F-) BACT for the T49 Waste Incinerator.

Step 2: Eliminate Technically Infeasible Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing fluoride emissions from the Incinerator.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a fluorides technology is a technically feasible option for the T149 Waste Incinerator..

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of caustic scrubbing with sodium hydroxide (NaOH) to achieve an outlet concentration of no more than 32 ppmv hydrogen chloride and chlorine gas (total chlorine) dry corrected to 7% oxygen, expressed as $Cl^{(-)}$ equivalent is the only viable technology for controlling Fluorides (F-) emissions resulting from the Waste incinerator at the Evonik Corporation Tippecanoe Laboratories.

Sodium hydroxide (NaOH) Injection - Outlet concentration of no more than 32 ppmvdc HCl/Cl2 (as a surrogate for F-)

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed Fluorides BACT determination along with the existing Fluoride (F-) BACT determinations for Waste Incineration. All data in the table is based on the information obtained from the permit application submitted by Evonik Corporation Tippecanoe Laboratories, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

Company Name / Operation	Process Description	Control Type	Control Efficiency
PROPOSED FLUORIDES BACT FOR T49			
Evonik Corporation, Tippecanoe Laboratories - Lafayette, IN (Proposed 157-34091-00006)	T49 Liquid Waste Incinerator	NaOH Injection	32 ppmvdc HCl/Cl2
COMPARABLE FLUORIDES BACT DETERMINATIONS			
Evonik Corporation – Tippecanoe Laboratories (Permit T157-26575-00006)	T49	NaOH Injection	98% Control of HCl
Evonik Corporation – Tippecanoe Laboratories (Permit T157-26575-00006)	T149	NaOH Injection	98% Control of HCl

Aside from Evonik, there are no permit limits in RBLC for fluoride emissions from hazardous waste combustion units. The existing Flexible Permit specifies that BACT for fluoride emissions from T149 is 98% control of HCl emissions, which corresponds to an outlet concentration of 77 ppmvdc HCl (used as a surrogate for F-). The current Hazardous Waste Combustor MACT (40 CFR Part 63, Subpart EEE) HCl/Cl2 limit of 32 ppmvdc is more stringent than the 98% control of HCl that corresponds to 77 ppmvdc HCl.

Regulatory Limits: There are no regulatory limits for fluoride emissions that are applicable to hazardous waste incinerators. The combined hydrogen chloride/chlorine limit from hazardous waste incinerators (40 CFR Part 63, Subpart EEE) is 32 ppmvdc for existing units.

Permit Limits: The existing Flexible Permit specifies that BACT for fluoride emissions from T149 is caustic scrubbing with NaOH to achieve 98% removal efficiency of HCl, which corresponds to an outlet concentration of 77 ppmvdc.

Feasibility of Control Technology: Fluoride emissions may be controlled through the use of a wet or dry scrubbing system.

Proposal: **Evonik Corporation- Tippecanoe Laboratories** – Lafayette, IN

The following has been proposed as BACT for Fluorides for Waste Incineration (T149 Rotary Kiln incineration):

Caustic scrubbing with NaOH to achieve an outlet concentration of no more than 32 ppmv hydrogen chloride and chlorine gas (total chlorine) dry corrected to 7% oxygen expressed as a chloride ($Cl^{(-)}$) equivalent.

Step 5: Select BACT

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), IDEM, OAQ has determined that BACT for T149 Fluorides (F-) is as follows:

Caustic scrubbing with NaOH to achieve an outlet concentration of no more than 32 ppmv hydrogen chloride and chlorine gas (total chlorine) dry corrected to 7% oxygen, expressed as $Cl^{(-)}$ equivalent, which is equivalent to the MACT HCl and Cl_2 limit for existing sources contained in 40 CFR Part 63 Subpart EEE [63.1219(a)(6)].

Fugitive VOC BACT – BCM Operations and BCM Support Operations

Fugitive emissions occur primarily from small leaks in piping systems, including pumps, valves, open-ended valves or lines, connectors, instrumentation systems, and closed vent systems. Fugitive emissions occur in such a way as to render it difficult or impossible to duct them except as a very low concentration portion of the general ventilation system. This characteristic of extremely low VOC concentration at a high gas flow rate means that the use of add-on control equipment is nearly always prohibitively expensive, and often technologically futile.

Two basic approaches are used to minimize fugitive VOHAP/VOC emissions from industrial process equipment and its associated supply and waste treatment systems. Both approaches are included in regulated leak detection and repair (LDAR) programs.

The first approach is to use design specifications and work practices to reduce leaks in solvent areas. For example, closed purge sampling systems are used, open pipe ends are capped or blinded, and rupture disks replace pressure relief valves.

The second approach is to implement an LDAR program. An LDAR program includes:

1. Identifying the equipment components;
2. Monitoring of components for VOHAP/VOC emissions using a defined test method(s);
3. Defining the frequency for monitoring components;
4. Repairing or replacing leaking components; and
5. Maintaining records of the tests, results, and repairs.

Step 1: Identify Potential Control Technologies

The potential control technology for fugitive VOC emissions from the BCM Operations and BCM Support Operations is implementation of a leak detection and repair (LDAR) program. No add-on control technology has been identified as a potential fugitive VOC emissions control technology for these operations.

Step 2: Eliminate Technically Infeasible Options

The test for technical feasibility of any control option is whether it is both available and applicable to reducing fugitive VOC emissions from the BCM Operations and BCM Support Operations.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of an LDAR program is a technically feasible option for the fugitive VOC emissions from these operations.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

As the only potential control technology for fugitive VOC emissions, implementation of an LDAR program has been shown to be technically feasible.

Step 4: Evaluate the Most Effective Controls and Document the Results

Evonik will implement a leak detection and repair (LDAR) program to satisfy VOC BACT for fugitive emissions, as outlined in the applicable MACT subparts.

Regulatory Limits: The fugitive VOHAP/VOC emissions in BCM Operations and BCM Support Operations are subject to the four federal Clean Air Act LDAR requirements listed below.

Applicable federal LDAR requirements:
1. 40 CFR 63.1255, Pharmaceutical Production (Pharma) MACT
2. 40 CFR 63.2480, Miscellaneous Organic Chemical Manufacturing NESHAP (MON)
3. 40 CFR 63.691, Off-site Waste and Recovery Operations (OSWRO) MACT
4. 40 CFR Part 63 Subpart I, the Negotiated Regulation for Equipment Leaks

An alternative operating scenario included in the Title V operating permit is described below for production of such processes that trigger applicability of the National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry (herein referred to as the HON), 40 CFR Part 63 Subpart F (which incorporates Subparts G and H by reference).

The fugitive VOHAP/VOC emissions in BCM Operations and BCM Support are subject to the two state fugitive emission control requirements listed below.

Applicable state LDAR requirements:
1. Synthesized pharmaceutical manufacturing rule [326 IAC 8-5-3]
2. PSD Best Available Control Technology (BACT) Requirements [326 IAC 2-2]

Permit Limits: The existing Flexible Permit specifies that BACT for fugitive VOC emissions from BCM Operations and BCM Support Operations is an LDAR program.

Feasibility of Control Technology: Fugitive VOC emissions are currently controlled through an LDAR program. No add-on control technology has been identified as a potential fugitive VOC emissions control technology for these operations.

Proposal: **Evonik Corporation- Tippecanoe Laboratories** – Lafayette, IN
The following has been proposed as BACT for fugitive VOC emissions from BCM Operations and BCM Support Operations:

Leak Detection and Repair (LDAR) Program:

(1) The proposed LDAR program is consistent with the most stringent regulatory standards. These standards are described in detail in Appendix A – Section E (LDAR Program) of the TSD; and

(2) There were no fugitive VOC emission control requirements listed in the RBLC database.

Step 5: Select BACT
Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD)), IDEM, OAQ has determined the fugitive VOC BACT for the BCM Operations and Support Operations is as follows:

The fugitive VOC emissions from the BCM and BCM Support Operations shall be controlled by the Leak Detection and Repair (LDAR) Program as described in Section E.1 and E.2 of the permit

Best Available Control Technology during Startup and Shutdown

Startup and Shutdown (SU/SD) conditions are short duration events during which the emission unit is in non steady-state mode. During these events the emission control equipment for the emission units cannot operate at optimum level of performance due to large variations in flow and concentration. Consequently, it is unreasonable to set emission limits that are as stringent as those determined to be BACT under normal operating conditions. Nonetheless, New Source Review guidance requires that emissions be set that assure no violation of the National Ambient Air Quality Standard (NAAQS).

If the compliance with steady state BACT limits is not feasible during startup and shutdown, then the PSD permit must include other limitations or work practices that protect the NAAQS and PSD increment.

The following analysis of the proposed permit supports that the permit includes provisions to protect the NAAQS and PSD increments:

Carbon dioxide (CO) Emissions:
The NAAQS for CO are a one-hour average and an eight-hour average. The permit includes an annual emission limit of 150 tons per year CO for the units subject to PSD requirements. The PSD permit review included a worst case assessment that if all 150 tons of CO were emitted from the T49 incinerator, the CO NAAQS would not be violated. CO emissions that occur during periods of startup and shutdown will be included in the determination of compliance with the 150 ton per year limit. [Note: The T49 incinerator would have to emit CO at a rate 4.5 times higher than its MACT/BACT limit of 100 ppmv for an entire year to emit 150 tons per year.] In order for the T49 incinerator to exceed the one-hour CO NAAQS, it would have to emit 51,900 ppmv of CO for an hour under the worst meteorological conditions. This is more than 500 times the MACT/BACT CO limit. Likewise, T49 would have to emit 45,000 ppmv of CO for eight hours under the worst meteorological conditions to cause concentrations to exceed the eight-hour CO NAAQS. During startup and shutdown of the RTOs and incinerators, these units will be burning only natural gas, which results in low CO emissions except for the brief periods of ignition of the gas. When process fumes or waste are first introduced to the combustion chambers of these units [also considered a startup activity], CO emissions will be momentarily higher than normal, but nowhere near the emission levels needed to cause NAAQS violations. Shutdowns of the T149 incinerator include the process of clearing the kiln of solid waste and could last as long as 30 minutes. Evonik operates T149 in a normal manner until the waste is cleared from the kiln. Emissions are normal during this period. Based on this analysis, IDEM concludes that the startup and shutdown provisions provided in the applicable MACT rules establish appropriate conditions for CO BACT requirements during startup and shutdown events.

Fluorides (F-) Emissions:
There is no NAAQS for fluorides. Nonetheless, fluoride emissions during startup and shutdown will be lower than during periods of normal operation because fluoride emissions are due solely to combustion of fluorine-containing process fumes or wastes. These materials will not be burned during startup and shutdown of the RTOs and incinerators. When process fumes or waste are first introduced to the combustion chambers of these units [also considered a startup activity], fluoride emissions are expected to be within BACT emission limits. Shutdowns of the T149 incinerator include the process of clearing the kiln of solid waste and could last as long as 30 minutes. Evonik operates T149 in a normal manner until the waste is cleared from the kiln. Emissions are normal during this period. Based on this analysis, IDEM concludes that the startup and shutdown provisions provided in the applicable MACT rules establish appropriate conditions for F- BACT requirements during startup and shutdown events.

Volatile Organic Compounds (VOCs)/Ozone Emissions:

The NAAQS for ozone is an 8-hour average. The permit includes an annual emission limit of 300 tons per year VOC for the units subject to PSD requirements. The PSD permit review included an assessment that VOC emissions would not cause or significantly contribute to a violation of the ozone NAAQS. VOC emissions that occur during periods of startup and shutdown will be included in the determination of compliance with the 300 ton per year limit. Furthermore, the VOC BACT limits for the RTOs and waste incinerators reflect burning fume streams or waste streams with solvent content. During startup and shutdown of the RTOs and incinerators, these units will be burning only natural gas, which will cause lower VOC emissions. When process fumes or waste are first introduced into the combustion chambers of these units [also considered a startup activity], VOC may momentarily be higher than normal, but generally emissions are expected to be within BACT emission limits. Shutdowns of the T149 incinerator include the process of clearing the kiln of solid waste and could last as long as 30 minutes. Evonik operates T149 in a normal manner until the waste is cleared from the kiln. Emissions are normal during this period. Based on this analysis, IDEM concludes that the startup and shutdown provisions provided in the applicable MACT rules establish appropriate conditions for VOC BACT requirements during startup and shutdown events.

Appendix C

<u>Air Quality Analysis</u>

Evonik Corporation Tippecanoe Laboratories

Lafayette, Indiana (Tippecanoe County)

Permit Number: 157-33448-00006

Proposed Project

Evonik Corporation Tippecanoe Laboratories (Evonik) submitted their Prevention of Significant Deterioration (PSD) modeling in September 2013. This is in conjunction with an application to renew their existing Part 70/Title V operating permit.

Evonik proposes to conduct a series of modifications and equipment installations over a 5 year period that may increase emissions of carbon monoxide (CO), fluorides, and volatile organic compounds (VOCs).

Trinity was the consultant that prepared the modeling portion of the application for Evonik. This technical support document provides the air quality analysis review of the submitted modeling by Trinity for Evonik.

Analysis Summary

Based on the potential emissions after controls, a PSD air quality analysis was triggered for CO, VOC, and fluorides. The significant impact analysis for CO determined that modeling concentrations did not exceed the significant impact levels (SILs). A refined analysis was done for fluorides. A Hazardous Air Pollutant (HAP) analysis was performed since Evonik was major for HAPs.

Air Quality Impact Objectives

The purpose of the air quality impact analysis in the permit application is to accomplish the following objectives. Each objective is individually addressed in this document in each section outlined below.

A. Establish which pollutants require an air quality analysis based on PSD significant emission rates.

B. Provide analyses of actual stack heights with respect to Good Engineering Practice (GEP), the meteorological data used, a description of the model used in the analysis, and the receptor grid utilized for the analyses.

C. Determine the significant impact level, the area impacted by the source's emissions, and background air quality levels.

D. Demonstrate that the source will not cause or contribute to a violation of the National Ambient Air Quality Standard (NAAQS) or PSD increment if the applicant exceeds SILs.

E. Perform a secondary ozone analysis if the applicant is major for Nitrogen Dioxide (NO_2)

and/or VOCs.

F. Perform a secondary fine particulate matter ($PM_{2.5}$) analysis if the applicant is major for NO_2 and sulfur Dioxide (SO_2).

G. Perform a qualitative analysis of the source's impact on general growth, soils, vegetation, and visibility in the impact area with emphasis on any Class I areas. The nearest Class I area is Kentucky's Mammoth Cave National Park.

H. Perform a HAP screening for informational purposes.

I. Summarize the Air Quality Analysis.

Section A - Pollutants Analyzed for Air Quality Impact

Applicability

The PSD requirements, 326 IAC 2-2, apply in attainment and unclassifiable areas and require an air quality impact analysis of each regulated pollutant emitted in significant amounts by a major stationary source or modification. Significant emission levels for each pollutant are defined in 326 IAC 2-2-1 and in the Code of Federal Regulations (CFR) 52.21(b) (23) (i).

Proposed Project Emissions

CO, VOCs, and fluorides are the main pollutants that will be emitted from Evonik for this permit and are summarized below in Table 1. CO, VOC, and fluorides potential emissions after controls exceed the PSD significant emission rates and require an air quality analysis.

TABLE 1
Significant Emission Rates for PSD

POLLUTANT	**SOURCE EMISSION RATE (Facility totals in tons/year)**	**SIGNIFICANT EMISSION RATE (tons/year)**	**PRELIMINARY AQ ANALYSIS REQUIRED**
CO	150	100	Yes
Fluorides	6	.6	Yes
VOC	300	40	Yes

Section B – Good Engineering Practice (GEP), Met Data, Model Used, Receptor Grid and Terrain

Stack Height Compliance with Good Engineering Practice (GEP)

Applicability

Stacks should comply with GEP requirements established in 326 IAC 1-7-4. If stacks are lower than GEP, excessive ambient concentrations due to aerodynamic downwash may occur. Dispersion modeling credit for stacks taller than 65 meters (213 feet) is limited to GEP for the purpose of establishing emission limitations. The GEP stack height takes into account the distance and dimensions of nearby structures, which affects the downwind wake of the stack. The downwind wake is considered to extend five times the lesser of the structure's height or width. A GEP stack height is determined for each nearby structure by the following formula:

$$Hg = H + 1.5L$$

Where: Hg is the GEP stack height
H is the structure height
L is the structure's lesser dimension (height or width)

New Stacks

Since stack heights for Evonik are below GEP stack height, the effect of aerodynamic downwash is accounted for in the air quality analysis for the project.

Meteorological Data

The National Weather Service (NWS) 1-minute Automated Surface Observation Station (ASOS) meteorological data used in AERMOD consisted of 2008 through 2012 surface data from the airport in Indianapolis, Indiana and upper air measurements taken at Lincoln, Illinois. The meteorological data was preprocessed using the latest versions of AERMINUTE, AERSURFACE, and AERMET at the time the permit was prepared.

Model Description

Trinity used AERMOD Version 12345. The Office of Air Quality (OAQ) used the same model version in their air quality analysis review to determine maximum off-property concentrations or impacts for each pollutant. All regulatory default options were utilized in the U.S. EPA approved model, as listed in the 40 Code of Federal Regulations Part 51, Appendix W "Guideline on Air Quality Models".

Receptor Grid

OAQ modeling used the same receptor grids generated by Trinity. The receptor grid is outlined below to determine the significant impact area for each pollutant:

- 100 meter spacing along the facility's property boundary,
- 100 meter spacing out to 4 kilometers,
- 500 meters spacing from 4 kilometers to 7 kilometers,
- 1000 meters spacing from 7 kilometers to 15 kilometers,
- 2500 meters spacing from 15 kilometers to 50 kilometers.

Treatment of Terrain

Receptor terrain elevation inputs were interpolated from NED (National Elevation Dataset) data obtained from the USGS. NED terrain data was preprocessed using AERMAP.

Section C - Significant Impact Level/Area (SIA) and Background Air Quality Levels

A significant impact analysis was conducted to determine if the source would exceed the PSD SILs (concentrations). If the source's concentrations exceed these levels, further air quality analysis is required. Refined modeling for CO was not required because the results did exceed SILs. Fluorides don't have a SIL so refined modeling is required. Trinity modeled the worst case operating scenario to predict maximum concentrations. SILs are defined by the following time periods in Table 2 below with all maximum-modeled concentrations from the worst case operating scenario.

TABLE 2
Significant Impact Analysis

POLLUTANT	TIME AVERAGING PERIOD	MAXIMUM MODELED IMPACTS ($\mu g/m^3$)	SIGNIFICANT IMPACT LEVEL ($\mu g/m^3$)	REFINED AQ ANALYSIS REQUIRED
Fluorides	24-hour	1.72	N/A	Yes
CO	1hour[1]	140.2	2000	No
CO	8 hour[1]	56.6	500	No

[1] The first highest values per the U.S. EPA NSR manual dated October 1990.

Pre-construction Monitoring Analysis

Applicability

The PSD rule, 326 IAC 2-2-4, requires an air quality analysis of the new source or the major modification to determine if the pre-construction monitoring threshold is triggered. In most cases, monitoring data taken from a similar geographic location can satisfy this requirement if the pre-construction monitoring threshold has been exceeded. Also, post construction monitoring could be required if the air quality in that area could be adversely impacted by applicant's emissions.

Modeling Results

The modeling results were compared to the PSD preconstruction monitoring thresholds. The results are shown in the table below.

TABLE 3
Preconstruction Monitoring Analysis

POLLUTANT	**TIME AVERAGING PERIOD**	**MAXIMUM MODELED IMPACTS ($\mu g/m^3$)**	**DEMINIMIS LEVEL (µg/m3)**	**ABOVE DE MINIMIS LEVEL**
Fluorides	24-hour	1.72	.25	Yes

[1] The first highest values per the U.S. EPA NSR manual dated October 1990. Maximum modeled impacts are from Evonik only.

Fluorides did trigger the preconstruction monitoring threshold level. Evonik can satisfy the preconstruction monitoring requirement for Fluorides since Evonik conducted an air quality modeling analysis in lieu of monitoring.

Background Concentrations

Applicability

U.S. EPA's "Ambient Monitoring Guidelines for Prevention of Significant Deterioration" (EPA-450/4-87-007) Section 2.4.1 is cited for approval of the monitoring sites chosen for this area.

Background Monitors

Background data does not exist for fluorides. Since this is the case, local fluoride inventory sources were included in the modeling analysis.

Section D – Fluorides

Since there is no NAAQs or PSD increment analysis, Fluorides analysis will be discussed in this section.

Fluoride Analysis and Results

Fluoride modeling was performed for the appropriate time-averaging periods. OAQ maximum-modeled concentrations during the five years are shown in Table 4. Since there is no federal or Indiana specific fluoride standards these results are for informational purposes only. These values are below 24-hour standards that have been set in several states.

TABLE 4
Fluoride Analysis

Year	Time-Averaging Period	Maximum Concentration ug/m3
2008	24-hour	1.29
2009	24-hour	1.46
2010	24-hour	1.72
2011	24 hour	1.36
2012	24-hour	1.33

Part E - Secondary Ozone Formation Analysis

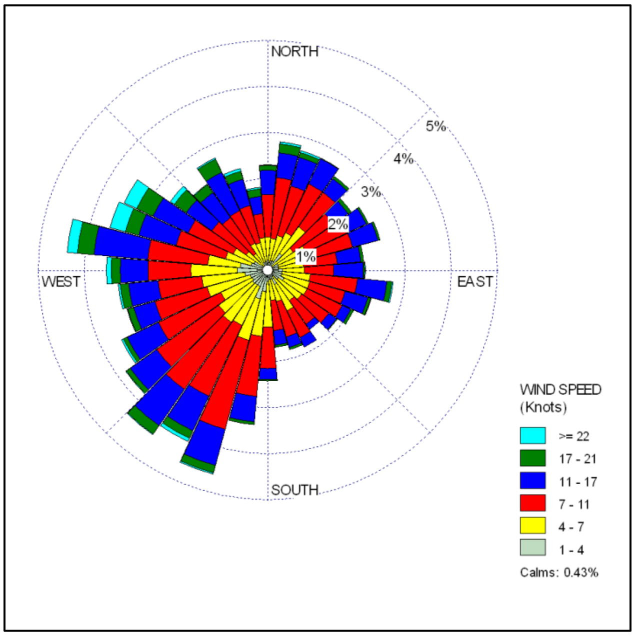
Because of the well established relationship between nitrogen oxides (NO_x), volatile organic compounds (VOCs), and the regional transport formation of ozone, U.S. EPA developed the Cross State Air Pollution Rule (CSAPR) to assist states to meet the ozone NAAQS. This rule included extensive modeling to support the emissions reductions necessary in each state to achieve the ozone NAAQS in the eastern U.S. The source category responsible for these reductions is Electric Generating Units (EGUs). While the U.S. Court of Appeals for the D.C. Circuit issued a decision vacating CSAPR on August 21, 2012, the modeling analysis conducted by U.S. EPA is considered valid and will be used for the ozone analysis.

U.S. EPA used a regional model, Comprehensive Air Quality Model with extensions (CAMx), and the Air Quality Assessment Tool (AQAT) to determine levels of emissions reduction from EGUs necessary to achieve the current 8-hour ozone NAAQS of 75 ppb at every site. The documentation includes extensive tables showing impacts at all ozone monitors in the eastern U.S. and emission reduction levels necessary to achieve those results. To examine the possible impact of Evonik Tippecanoe Labs, results from the modeling U.S. EPA conducted to establish the 2012 and 2014 base case emissions in CSAPR were used for this analysis. The CSAPR website is located at http://www.epa.gov/crossstaterule/techinfo.html.

Information regarding the NO_x emissions modeled for CSAPR can be found in the "EmissionsSummaries.xlsx" spreadsheet under the Emissions Inventory Final Rule TSD section at EPA's CSAPR website for technical information http://www.epa.gov/crossstaterule/techinfo.html. The spreadsheet shows the base case annual NO_x emissions for Indiana in 2012 at 455,325 tons and base case annual NO_x emissions by 2014 at 431,342 tons. Indiana's total NO_x emission reduction between these scenarios totals 23,983 tons. All surrounding states make similar significant reductions. Evonik's proposed emissions would be 300.0 tons per year of VOCs.

The nearest ozone monitor to Evonik is the Flora monitor in Carroll County. The current 8-hour ozone design value for 2010-2012 at the Flora ozone monitor is 71 parts per billion (ppb), below the 8-hour ozone NAAQS of 75 ppb. Preliminary 2011-2013 data for Carroll County shows the 8-hour ozone design value will decrease to 69 ppb. Figure 1 below is the 2012 wind rose taken from the Purdue/West Lafayette Airport meteorological station in Tippecanoe County, showing the winds typically blow from the southwest and west. Evonik would be considered upwind of the Flora ozone monitor.

FIGURE 1
Tippecanoe County 2012 Wind Rose



8-Hour Ozone Modeling Results

The U.S. EPA CSAPR modeling results show the maximum modeled 8-hour ozone concentration for Carroll County is 67.3 ppb for the 2012 base case and 65.7 ppb for the 2014 base case. This is a decrease of 1.6 ppb as a result of NO_x emission adjustments between 2012 and 2014 base case emission calculations, based on emission growth factors. In order for this modeled 8-hour ozone concentration reduction to occur, Indiana's 2014 NO_x emissions were reduced from the 2012 base case emissions by 23,983 tons. The Carroll County monitoring site is not necessarily impacted by every EGU in Indiana, but in the surrounding states, thousands of tons of annual NO_x emission reductions are projected to occur by 2014, many of which would impact this site. Therefore, to estimate the impact of Evonik on modeled concentrations, the ratio of Evonik's VOC emissions to Indiana's 2012 to 2014 base case NO_x emission reduction was calculated. This ratio was then compared to the modeled ozone impact from the difference between the CSAPR 2012 and 2014 base case modeling results.

1) **300.0 tons** Evonik's VOC emissions / **23,983 tons** of Indiana's NO_x base case emissions reduced from 2012 to 2014 = **1.251%** ratio of EVONIK's VOC emissions compared to Indiana's NO_x emissions

2) **1.251%** Evonik's emission ratio *** 1.6 ppb** maximum 8-hour 2012 to 2014 Base Case modeled results on Carroll County monitor = **0.02 ppb** of Evonik's 8-hour ozone impact

3) **0.02 ppb** of Evonik's 8-hour ozone impact / **65.7 ppb** at the Carroll County ozone monitor from

2014 base case maximum modeled results = **0.031%** EVONIK's impact on the 2014 base case modeled concentration.

Tables for the modeled 8-hour ozone design values are located in U.S. EPA's CSAPR's website, under the Air Quality Final Modeling Rule: AQModeling.pdf, Appendix B, pages B-10 and B-11 that show the modeled base case 2012 ozone concentrations at surrounding monitoring sites versus projected base case 2014 ozone concentrations. 2012 Base Case results were modeled using the 2012 Base Case emissions and 2014 Base Case results were modeled from the 2014 Base emissions with emission adjustments projected from growth factors factored into the modeling. Table 5 below shows the CSAPR modeling results for the Carroll County ozone monitor and the potential impact from Evonik on surrounding ozone monitors.

TABLE 5
EPA's Cross-State Air Pollution Rule - 8-Hour Ozone Modeling Results

Monitor ID	County	2012 Base (ppb)	2014 Base (ppb)	2012-2014 Base (ppb)	Anticipated Source Impact (ppb)	Source Impact on 2014 Base Results (%)
180150002	Flora - Carroll Co.	67.3	65.7	1.6	0.020	0.0305%
180110001	Whitestown – Boone Co.	73.4	71.7	1.7	0.021	0.0297%
180630004	Avon – Hendricks Co.	68.9	67.4	1.5	0.019	0.0278%
180570005	Noblesville – Hamilton Co.	78.9	77.1	1.8	0.023	0.0292%

Summary of Ozone Results

Evonik's VOC emissions were compared with the U.S. EPA CSAPR modeling for 8-hour ozone to determine what impacts may occur as a result of ozone formation. When Evonik's emissions were compared with the amount of NO_x emission reductions realized from emission estimates associated with base case emissions for CSAPR and compared with CSAPR modeling results for 8-hour ozone, the impacts from Evonik on the Flora ozone monitor in Carroll County are anticipated to be minimal and not have a significant impact on the attainment status of Carroll County and any surrounding counties.

Part G – Qualitative Analysis

Additional Impact Analysis

All PSD permit applicants must prepare an additional impact analysis for each pollutant subject to regulation under the Act. This analysis assesses the impacts on growth, soils and vegetation, endangered species, and visibility caused by any increase in emissions of any regulated pollutant from the source. The Evonik modeling submittal provided an additional impact analysis performed by Trinity.

Economic Growth

The purpose of the growth analysis is to quantify project associated growth and estimate the air quality impacts from this growth either quantitatively or qualitatively.

It is estimated that minimal employment will be created as a result of the proposed project. Most of the employees will be drawn from surrounding areas. It is not expected the growth impacts will cause a violation of the NAAQS or the PSD increment.

Soils and Vegetation Analysis

A list of soil types present in the general area was determined. Soil types include the following:

loamy glacial till, moderate thick loess over loamy glacial till, and thin loess over loamy glacial till.

Due to the agricultural nature of the land, crops in the Tippecanoe County area consist mainly of corn, sorghum, wheat, soybeans, and oats (2002 Agricultural Census for Tippecanoe County). The maximum modeled concentrations for Evonik are well below the threshold limits necessary to have adverse impacts on the surrounding vegetation such as autumn bent, nimblewill, barnyard grass, bishopscap and horsetail, and milkweed (Flora of Indiana – Charles Deam). Livestock in Tippecanoe County consist mainly of hogs, cattle, and sheep (2002 Agricultural Census for Tippecanoe County) and will not be adversely impacted from the facility. Trees in the area are mainly hardwoods. These are hardy trees and no significant adverse impacts are expected due to modeled concentrations.

Federal and State Endangered Species Analysis

Federal and state endangered species are listed by the U.S. Fish and Wildlife Service, Division of Endangered Species for Indiana. Of the federal and state endangered species on the list, 15 mollusks, 3 insects, 4 reptiles, 12 birds, and 3 mammals have habitat within Tippecanoe County. The mollusks and certain species of birds and mammals are found along rivers and lakes while the other species of birds, mammals, and reptiles are found in forested areas. The facility is not expected to have any additional adverse effects on the habitats of the species than what has already occurred from the industrial, farming, and residential activities in the area.

Federal and state endangered plants are listed by the U.S. Fish and Wildlife Service, Division of Endangered Species for Indiana. At this time 13 endangered species are found in Tippecanoe County. The endangered plants do not thrive in industrialized and residential areas. The facility is not expected to adversely affect any plant on the endangered species list.

Visibility Analysis

The VISCREEN model is designed as a screening model to determine the visual impact parameters from a single source plume. It is used basically to determine whether or not a plume is visible as an object itself. The visibility impairment analysis considers the impacts that occur within the impact area of the source as defined by the user distances. The user distances are determined by the nearest interstate or airport. EPA has defined these locations in guidance to the state.

Since PSD dispersion modeling is not triggered for any visibility affecting pollutants (NO_x, PM, SO_2, and H_2SO_4, an assessment of visibility impacts is not required.

The nearest Class I area is Mammoth Cave National Park in Kentucky, just over 366 kilometers away from the source, but emissions are below the Federal Land Manager guidance screening threshold.

Additional Analysis Conclusions

Finally, the results of the additional impact analysis conclude the operation of the facility will have no significant adverse impact on economic growth, soils, vegetation, or visibility in the immediate vicinity or on any Class I area.

Part H – HAPs Analysis

OAQ currently requests data concerning the emission of 189 HAPs listed in the 1990 Clean Air Act Amendments (CAAA) that are either carcinogenic or otherwise considered toxic and may be used by industries in the State of Indiana. These substances are listed as air toxic compounds on the State of Indiana, Department of Environmental Management, Office of Air Quality's construction permit application Form GSD-08.

For Evonik, a full HAP analysis was completed comparing the maximum estimated concentrations of each pollutant with the Unit Risk Factor (URF) or the Inhalation Unit Risk, and the Reference Concentration (RfC). This analysis offers a refined, up to date site specific analysis that takes into account the different potencies and health effects that each pollutant presents to the public.

The URF is the upper-bound excess lifetime cancer risk estimated to result from continuous inhalation exposure to a pollutant over a 70 year lifetime. Multiplying the estimated concentration by the URF will produce a cancer risk estimate. The cancer risk estimate is the conservative probability of developing cancer from exposure to a pollutant or a mixture of pollutants over a 70 year lifetime, usually expressed as the number of additional cancer cases in a given number of people, e.g., one in a million. For screening purposes at Evonik, the cancer estimates for each pollutant are considered to be additive when deriving the cumulative maximum individual cancer risk.

Non-cancer health effects are determined using the Reference Concentration. The RfC is an estimate of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. Dividing the estimated pollutant concentration by the RfC will determine the pollutant's Hazard Quotient (HQ). All of the HAPs' Hazard Quotients were added together to determine Evonik's Hazard Index (HI).

This HAP screening analysis uses health protective assumptions that overestimate the actual risk associated with emissions from Evonik. Estimates 1) assume a 70 year exposure time, 2) assume that all carcinogens cause the same type of cancer, 3) assume that all non-carcinogens have additive health effects, 4) assume maximum permit allowable emissions from the facility, and 5) use conservatively derived dose-response information. The risk analysis cannot accurately predict whether there will be observed health problems around Evonik; rather it identifies possible avenues of risk.

The results of the HAP modeling are in Table 6.

TABLE 6
Hazardous Air Pollutant Modeling Results

			Carcinogenic			Non-Carcinogenic		
Compound	**CAS Number**	**Modeled Maximum Annual Conc.**	**Unit Risk Factor (URF)**	**Source**	**Cancer Risk**	**Chronic Reference Conc. (RfC)**	**Source**	**Hazard Quotient**
		(ug/m^3)	**(ug/m^3)-1**			**(ug/m3)**		
1,1,2-Trichloroethane	79005	2.28E-05	1.6E-05	IRIS	3.65E-10	400.00	CAL	5.70E-08
1,1-Dichloroethylene	75354	1.00E-05	3.4E-04	HEAST	3.44E-09	200.00	IRIS	5.02E-08
1,2,4-Trichlorobenzene	120821	5.47E-05	1.0E-06	CAL	5.47E-11	200.00	HEAST	2.73E-07
1,3-Butadiene	106990	8.70E-06	3.0E-05	IRIS	2.61E-10	2.00	IRIS	4.35E-06
1,3-trans dichloropropene	10061026	9.51E-06	3.7E-05	HWIR	3.52E-10	0.02	HWIR	4.76E-04
1,3-Dinitrobenzene	99650	5.47E-05				0.35	Regions 6,9(R)	1.56E-04
1,4-Dichlorobenzene	106467	6.32E-05	1.1E-05	HEAST	6.96E-10	800.00	IRIS	7.90E-08
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	1.04E-10	3.3E+01	CAL	3.42E-09	4.00E-05	CAL	2.59E-06
2,4,6-Trichlorophenol	88062	8.00E-05	3.1E-06	IRIS	2.48E-10	0.35	Region 9(R)	2.28E-04

2,4-Dinitrotoluene	121142	8.13E-05	8.9E-05	CAL	7.24E-09	7.00	CAL	1.16E-05
2,6-Dinitrotoluene	606202	6.74E-05	1.9E-01	Regions 6,9(R)	1.28E-05	3.50	R	1.92E-05
2-chloroacetophenone	532274	1.22E-04				0.03	IRIS	4.06E-03
3,3'-Dichlorobenzidine	91941	3.50E-04	3.4E-04	CAL	1.19E-07			
Acetaldehyde	75070	1.52E-04	2.2E-06	IRIS	3.35E-10	9.00	IRIS	1.69E-05
Acetonitrile	75058	2.27E+00				60.00	IRIS	3.78E-02
Acetophenone	98862	1.42E-02						
Acrylonitrile	107131	3.25E-04	6.8E-05	IRIS	2.21E-08	2.00	IRIS	1.62E-04
Ammonia	7664417	3.99E-01				100.00	IRIS	3.99E-03
Antimony Compounds	0	8.87E-05				0.20	TRI	4.43E-04
Arsenic compounds	0	3.31E-05	4.3E-03	IRIS	1.42E-07	0.03	CAL	1.10E-03
Benzene	71432	7.46E-05	7.8E-06	IRIS	5.82E-10	30.00	IRIS	2.49E-06
Benzyl Chloride	100447	3.54E-02	4.9E-05	IRIS	1.72E-06	10.15	Region 9	3.49E-03
Beryllium compounds	0	3.59E-06	2.4E-03	IRIS	8.62E-09	20.00	IRIS	1.80E-07
bis(2-Chloroethyl) ether	111444	5.06E-05	3.3E-04	IRIS	1.67E-08			
bis(2-Ethylhexyl) phthalate	117817	6.03E-04	2.4E-06	CAL	1.45E-09	10.00	CAL	6.03E-05
Bromoform	75252	2.62E-05	1.1E-06	IRIS	2.88E-11			
Cadmium compounds	7440439	8.64E-05	1.8E-03	IRIS	1.55E-07	0.02	CAL	4.32E-03
Carbon disulfide	75150	1.65E-05				700.00	IRIS	2.36E-08
Carbon tetrachloride	56235	1.90E-05	6.0E-06	IRIS	1.14E-10	100.00	IRIS	1.90E-07
Chlorine	7782505	2.76E-02				0.15	ATSDR	1.84E-01
Chlorobenzene	108907	2.05E-05				1000.00	CAL	2.05E-08
Chlorobenzilate	510156	9.69E-06	7.8E-05	HEAST	7.56E-10			
Chloroform	67663	1.72E-02	2.3E-05	IRIS	3.96E-07	98.00	IRIS	1.76E-04
Chloromethane (Methyl chloride)	74873	2.74E-04	1.8E-06	SCDM	4.93E-10	90.00	IRIS	3.04E-06
Chromium (VI) compounds	18540299	5.03E-05	1.2E-02	IRIS	6.04E-07	0.10	IRIS	5.03E-04
Chrysene	218019	5.46E-05	1.1E-05	CAL	6.00E-10			
Cis-1,3-dichloropropene	10061015	1.27E-05	3.7E-05	HWIR	4.68E-10	200.0000	HWIR	6.33E-08
Cumene	98828	1.00E-05				400.00	IRIS	2.51E-08
Cyclohexane	110827	1.63E-01				6000.00	IRIS	2.72E-05
Diethanolamine	111422	1.93E-03				3.00	CAL	6.44E-04
Dimethyl formamide	68122	2.75E-02				30.00	IRIS	9.18E-04
Di-n-octyl phthalate	117840	9.67E-05				70.00	6(R)	1.38E-06
Chloroethane (Ethyl Chloride)	75003	4.05E-05	1.3E-07	CAL	5.39E-12	10000.00	IRIS	4.05E-09
Ethylbenzene	100414	7.33E-06	2.5E-06		1.83E-11	1000.00	IRIS	7.33E-09
Ethylene dibromide (1,2-dibromoethane)	106934	4.02E-05	6.0E-04	IRIS	2.41E-08	9.00	IRIS	4.47E-06
Ethylene dichloride (1,2-dichloroethane)	107062	1.01E-05	2.6E-05	IRIS	2.63E-10	2400.00	IRIS	4.21E-09
Ethylene glycol	107211	1.15E-01				400.00	CAL	2.88E-04
Ethylidene dichloride	75343	8.89E-06	1.6E-06	CAL	1.42E-11	500.00	HEAST	1.78E-08
Formaldehyde	50000	3.92E-04	1.3E-05	IRIS	5.10E-09	9.80	ATSDR	4.01E-05

Glycol Ethers	0	4.27E-01				20.00	TRI	2.13E-02
Heptane	142825	1.18E+00				1900.00	ACGIH	6.19E-04
Hexachlorobenzene	118741	5.05E-05	4.6E-04	IRIS	2.32E-08	3.00	Regions 6,9(N)	1.68E-05
Hexachlorobutadiene	87683	1.94E-05	2.2E-05	IRIS	4.27E-10	90.00	CAL	2.16E-07
Hexachlorocyclopenta diene	77474	6.31E-04				0.20	IRIS	3.15E-03
Hexachloroethane	67721	1.04E-04	4.0E-06	IRIS	4.15E-10	30.00	IRIS	3.46E-06
Hydrochloric Acid	7647010	3.25E-02				20.00	IRIS	1.62E-03
Lead compounds	0	3.05E-03	1.2E-05	CAL	3.66E-08	0.15	CAL	2.04E-02
Mercury, elemental	7439976	6.81E-04				0.30	IRIS	2.27E-03
Methanol	67561	8.31E+00				4000.00	CAL	2.08E-03
Methyl chloroform	71556	7.73E-06				5000.00	CAL	1.55E-09
Methyl ethyl ketone (MEK)	78933	1.01E-01				5000.00	IRIS	2.03E-05
Methyl tert butyl ether	1634044	4.79E-01	2.6E-07	CAL	1.24E-07	3000.00	IRIS	1.60E-04
Methylene chloride	75092	1.91E+00	1.0E-08	IRIS	1.91E-08	600.00	IRIS	3.18E-03
Naphthalene	91203	3.88E-05	3.4E-05	CAL	1.32E-09	3.00	IRIS	1.29E-05
n-Hexane	110543	1.88E+00				700.00	IRIS	2.69E-03
Nickel compounds	0	1.23E-04	2.4E-04	IRIS	2.94E-08	0.20	ATSDR	6.13E-04
Nitrobenzene	98953	5.05E-05	4.0E-05		2.02E-09	9.00	CAL	5.61E-06
Pentachloronitrobenze ne	82688	5.61E-05	7.4E-05	HEAST	4.15E-09			
Pentachlorophenol	87865	1.49E-03	5.1E-06	CAL	7.58E-09	100.00	CAL	1.49E-05
Polychlorinated biphenyl compounds (PCBs)	1336363	2.71E-07	1.0E-04	IRIS	2.71E-11	0.07	R	3.87E-06
Propylene dichloride (1,2-Dichloropropane)	78875	1.16E-05	1.9E-05	HEAST	2.20E-10	4.00	IRIS	2.90E-06
Selenium compounds	0	3.24E-05				20.00	CAL	1.62E-06
Styrene	100425	1.43E-05				1000.00	IRIS	1.43E-08
Toluene	108883	1.39E+00				5000.00	IRIS	2.78E-04
Trichloroethylene	79016	2.03E-05	4.1E-06	IRIS	8.32E-11	2.00	IRIS	1.01E-05
Triethylamine	121448	2.24E-01				7.00	IRIS	3.19E-02
Vinyl Acetate	108054	4.73E-05				200.00	IRIS	2.36E-07
Vinyl chloride	75014	1.66E-05	8.8E-06	IRIS	1.46E-10	100.00	IRIS	1.66E-07
				Risk =	1.63E-05		**HQ =**	0.33
				Below 1 in 10,000?	Yes		**Below 1?**	Yes

* Further information on URFs and RfCs can be found at the following U.S. EPA web site:
http://www.epa.gov/ttn/atw/toxsource/chronicsources.html

The Hazard Index for the project does not exceed 1. Pollutants with a HQ greater than 1 are considered to be at concentrations that could represent a health concern. Hazard Quotients above 1 do not represent areas where adverse health effects will be observed but indicate that the potential exists.

The additive cancer risk estimate is 1.63 additional cancer causes in one-hundred thousand people. This means if an individual was exposed to these HAPs continuously for 70 years, the risk of getting cancer from this exposure would be 1.63 in one-hundred thousand. The U.S. EPA considers one in ten thousand (1.0E-04) excess cancer risks to be the upper range of acceptability with an ample margin of safety. The probability for the general public to be exposed to this HAP for 24 hours a day, seven days a week, and 52 weeks a year for 70 years is minimal.

Part I - Summary of Air Quality Analysis

Trinity prepared the modeling portion of the PSD application. Tippecanoe County is designated as attainment for all criteria pollutants. CO, VOCs, and fluoride emission rates associated with the proposed facility exceeded the respective significant emission rates. Modeling results taken from the AERMOD model showed CO impacts were predicted to be less than the SILs. Evonik did trigger the preconstruction monitoring threshold level for fluorides but can satisfy the preconstruction monitoring requirement since Evonik provided an air quality analysis of the pollutant. The nearest Class I area is Mammoth Cave National Park in Kentucky, just over 366 kilometers away from the source. No visibility affecting pollutants are emitted so assessment of visibility is not required. An additional impact analysis was performed and the operation of the proposed facility will have no significant impact. A HAP analysis was performed and showed no likely adverse impact.

Appendix B
Technical Support Documentation for
Advance Source Modification Approval

Overview

This section of the TSD describes the elements of this permit that provide the Permittee with the flexibility to make changes at the plant site more quickly and with fewer administrative requirements. This flexible permit is based on provisions in Indiana's air permit regulations and guidance issued by USEPA.

The additional flexibility will exist while assuring compliance with Clean Air Act requirements and protecting air quality. Evonik proposes several flexible permit concepts which have been created or advocated under USEPA's P4 (Pollution Prevention Permitting Pilot) permitting program and other flexible permitting programs. These flexible permit concepts are based on the use of three elements:

1) Advance identification of the types of changes that will occur under the flexible permit, and the requirements that will apply to those changes;
2) Requiring highly effective emission control systems to assure compliance with applicable emission standards; and
3) Limiting emissions through BACT emission limits to assure protection of air quality.

The permit provides a higher level of flexibility and simplicity because of these features. It also establishes a higher level of environmental performance than would otherwise be required under Clean Air Act requirements applicable to the site. The permit requires Best Available Control Technology be used on the Bulk Chemical Manufacturing (BCM) operations and support areas – when applicable requirements would not otherwise require as high a level of controls. In particular, Evonik will control VOC and volatile organic HAPs by 98% or greater, and it will control sulfur dioxide and fluorides by greater than 97.5%. In some cases the site committed to additional upgrades of its emission control equipment beyond what existing rules or a traditional PSD permit would require. In addition, the emission limits that will limit overall BCM and support area emissions represent a significant reduction in the level of emissions the site could legally emit. Furthermore, Tippecanoe Laboratories has committed to utilize continuous emission monitoring systems (CEMs) to a much greater extent than would have been required by existing requirements.

The flexible permit also simplifies ongoing compliance and administrative requirements. The permit will streamline similar regulatory requirements into a single set of requirements. The streamlined permit conditions replace dozens of older permit conditions that established different performance requirements, compliance demonstration requirements, and record keeping/reporting obligations.

Background and description

Tippecanoe Laboratories serves several roles in Evonik's overall product development and manufacturing system. The site is involved in the research and development of the manufacturing process that will be used to produce new medicines. It also serves as the site where new products are first made and where existing products continue to be made. The source maintains extra capacity to back up other sites if manufacturing at another site cannot occur.

Because of these varying roles, the production facilities at Tippecanoe Laboratories must be capable of making frequent changes with minimal delay. In a typical year, Tippecanoe Laboratories will make more than 20 process and product changes. A flexible permit enables Tippecanoe Laboratories to make the necessary changes with minimal delay, and assures that air pollution control standards will be achieved and air quality will be protected.

In order to fulfill the various roles of Tippecanoe Laboratories in Evonik's manufacturing strategy, Evonik's would expect six types of changes that potentially would trigger air permitting requirements and/or changes in the applicable emission standards. More specific descriptions of these changes are described in greater detail:

- Production of new medicine compounds or intermediate compounds
- Process change for an existing product or intermediate
- Replacement of existing equipment in the pharmaceutical production unit
- Addition of new equipment or new building to a pharmaceutical production unit

In order to understand the nature of each of these changes, it is important to understand the nature of bulk pharmaceutical manufacturing. Synthesizing a pharmaceutical product or intermediate is the result of a series of chemical reactions and physical treatments (separations, filtrations, centrifugations, and drying) of a mixture of solvents and other raw materials. It is similar to following the recipe for making an elaborate food. Sometimes you can create the final product through a few chemical reactions and treatments. More often the process calls for multiple intermediate production steps where the process of chemical reactions and physical treatment occurs several times to transform the raw materials into a final bulk pharmaceutical product that is sent to another site for formulation into pills, capsules, vials, and other forms for human ingestion or injection.

The process takes place in a group of equipment commonly referred to as a production unit or rig. A rig generally consists of vessels or tanks where the chemical reactions take place and several other types of equipment to separate the desirable intermediate or final product from the unreacted or spent material. The separation is achieved through various means such as distillation, washing, centrifugation and drying.

While the general process of manufacturing a pharmaceutical product is relatively consistent, the specific process to make an individual product or intermediate is unique. The number of reactions that must take place will be different. The solvents and other raw materials may be different. The time, temperature and other variables of the chemical reactions are process specific. As a result, the emissions generated by any individual process will be different too.

Below is a more specific description of the types of changes that may occur at Tippecanoe Laboratories that under traditional permitting schemes may trigger air-permitting requirements.

New products: Because of its services in developing full scale manufacturing processes and launching production of new products, Tippecanoe Laboratories may be involved in production of new products for its customers. On average, Tippecanoe Laboratories will be involved in the process development or production of 2 to 3 new pharmaceutical or chemical products each year.

Process changes: Synthesizing an intermediate or final product - in either the pharmaceutical or specialized chemical industry - is an inexact science. It is common for the initial synthetic route for making a product to be less than ideal. The purpose of most process changes will be to improve the overall yield of the active ingredient in the final product. Frequently the process changes will reduce raw material, energy usage, waste generation, and emissions. The changes may involve anything from changing solvents and other raw materials to adjusting process control parameters such as reaction temperature and reaction time. In some instances, the process changes will change the emissions profile of a process.

Equipment replacement: The process vessels (tanks) in which the chemical synthesis occurs are subjected to harsh conditions. The solvents and raw materials used in the synthesis and the by-products of the synthesis can corrode or otherwise wear away the tank. Temperature changes used to drive a reaction or generated by the reaction can also affect the safety and performance of a tank. Additionally, FDA requirements establish strict purity standards for pharmaceutical products.

As a result, Tippecanoe Laboratories has an aggressive tank integrity testing program that requires sometimes results in the replacement of process tanks. Generally, the new tanks will be the same size as the old tank, thus assuring the process capacity does not change. In some cases, the material of construction for the new tank will be newer or more durable. The chemistry of a process can also impact the material of construction for a tank. This assures the widest degree of production flexibility for the tank in the future.

New equipment and New Buildings: Tippecanoe Laboratories' production facilities are designed to accommodate a wide variety of raw materials and process operations, and this aspect enables the site to use existing equipment to a great extent to manufacture both existing products and new products. In some instances, however, it may be necessary to add additional equipment to a process rig in order to implement a process change or to make a new product. For example, the new equipment might be another tank to handle an additional reaction or process step or centrifuge that is larger to handle a larger amount of wetcake created by the process.

In some cases, Evonik's customers may have proposals involving large-scale production that warrant the addition of a new production building or an annex to an existing production building to meet the customer's needs.

While the potential emissions attributed to the new equipment could be above various permitting thresholds, typically this type of project has little impact on the site overall VOC and HAP emissions.

Flexible permit concept and scope

Evonik's flexible permit proposal is based on the concept of pre-approval of changes with known standards for emissions control technology, emission limitations and compliance assurance. Although the production operations will change, the applicable regulatory requirements (the most stringent of which include the National Emission Standards for Hazardous Air Pollutants [NESHAP] for Pharmaceuticals Production [40 CFR Part 63, Subpart GGG; also referred to as the Pharmaceutical Production MACT], NESHAP for Miscellaneous Organic Chemical Manufacturing or MON [40 CFR Part 63, Subpart FFFF], and NESHAP from the Synthetic Organic Chemical Manufacturing Industry or SOCMI HON [40 CFR Part 63, Subparts F, G, and H]), the emission control systems to comply with those requirements, and the compliance assurance systems will not change. By approving in advance the types of changes that will likely occur at the site and linking them to the known compliance obligations those changes will entail, the permit can provide flexibility by reducing the administrative burdens of individual pre-approvals while still protecting air quality and the environment.

The Tippecanoe Laboratories' flexible permit proposal consists of the following elements:

- Advance approval of emission increases associated with anticipated types of changes;
- A requirement to utilize Best Available Control Technologies (BACT) to reduce emissions of the pollutants that would potentially increase above PSD significance thresholds as a result of the changes;
- A limit on emissions (emissions cap) applicable to the areas subject to the flexible permit provisions and provisions to measure and estimate actual emissions to verify compliance with the cap; and
- Condensing various Clean Air Act requirements that establish similar requirements for the same equipment into a streamlined, common requirement.

The table that appears at the end of this section of the TSD summarizes the flexible permit.

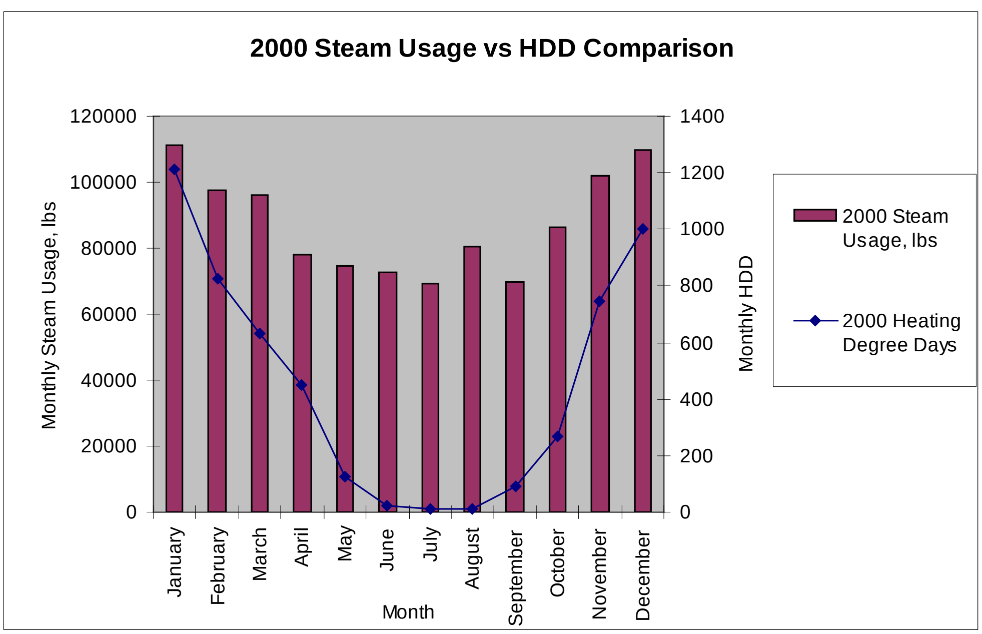
Scope of the flexible permit: As discussed earlier in this TSD, the Permittee will be issued a PSD permit for future modifications to the BCM facilities at Tippecanoe Laboratories. In addition to the potential increase in emissions of carbon monoxide (CO), fluorides (F^-) and volatile organic compounds (VOC) directly from the modifications, the permit allows the permittee to emit additional quantities of those three pollutants from operations supporting and relating to the BCM operations. These support operations include solvent storage, solvent recovery, waste solvent storage, wastewater treatment (encompasses both pretreatment and wastewater treatment facilities), and waste incineration.

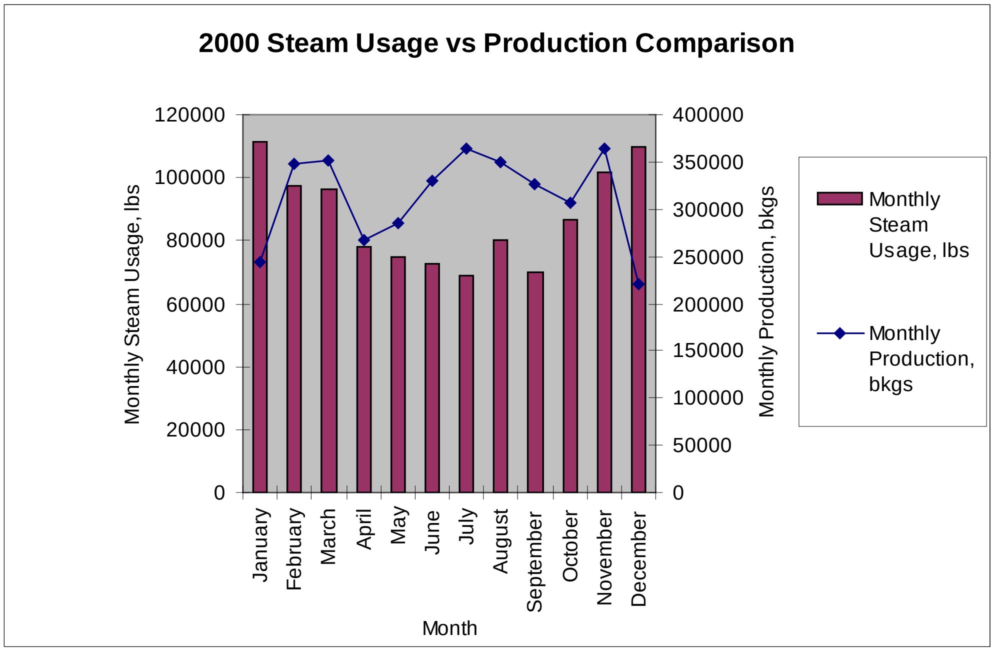
The modifications to BCM include manufacture of new products and intermediates, process changes, equipment replacement, and equipment additions to existing operations in process research/manufacturing buildings T27, T29, T31/T31A, T99 and T100. In addition, the modifications would also include process changes, equipment replacement, equipment additions to existing solvent and waste storage tank modules (T140, T142, T143, T145, and T146), and solvent recovery operations (T19, T52, and T61). Evonik anticipates there will be other physical changes or changes in the method of operation to the waste incinerators, such as upgrade, replacement or repair of incinerator components. Some BCM production buildings or operations could be replaced with entirely new operations.

The Fermentation Products operations and the site utility systems are outside the scope of the flexible permit. The Fermented Products operations manufacture pharmaceutical products, primarily for animals, by fermenting and purifying medicines. The products made in this area are not related to products made in BCM. Emissions in Fermented Products will not change due to any of the possible changes made in BCM. Therefore, the Fermented Products area is not within the scope of the flexible elements of this permit.

Except in the case of an expansion to the plant site, the Permittee does not anticipate an increase in demand for steam from the boilers or an increase other utility support operations as a result of the changes proposed under the flexible permit. Steam produced at the site is used for several purposes including general heating of buildings and process steam. Steam demand, however, is driven primarily by weather – cold weather. The Permittee has analyzed the relationship of steam production to weather conditions and BCM production levels, and that analysis demonstrates that steam demand is directly correlated to weather. The relationship between production rates and steam demand cannot be correlated. The following graphs illustrate this finding.

The first graph shows the relationship between steam production levels and heating degree-days for the year 2000. The graph shows that steam production rose and fell as heating degree days rose and fell. The second graph shows no discernible relationship between production rates and steam usage.





Advance approval: The concept of advance approval is the key mechanism for providing flexibility in the permit. Instead of requiring case-by-case administrative review of individual changes proposed by Tippecanoe Laboratories, the advance approval features of the permit condense those many future reviews into a single review that occurs well in advance of the change. As a result, instead of waiting up to several months for the permitting authority to review and approve a change before it can be made, the changes falling within the scope of the advance approval can be made immediately or after a notice is submitted to the permitting authority.

Advance approval works well when the applicable Clean Air Act requirements can be determined for each type of change and described adequately as a requirement in the permit. Because the applicable requirements for pharmaceutical manufacturing operations and prospective changes are readily known and easily described as permit terms, Tippecanoe Laboratories is a good candidate for advance approval terms.

The Clean Air Act and the USEPA and IDEM regulations implementing the Act have created several programs that require prior approval from an agency before a change can proceed. These programs include pre-construction permitting programs such as Major and Minor New Source Review, the Part 61 NESHAP and Part 63 MACT pre-construction approval provisions, Section 112(g) case-by-case MACT determinations, and the Title V operating permit program.

Of these prior approval requirements, the Permittee will use advance approval provisions to address prior approval requirements of Indiana's Minor NSR program and the Title V operating permit program. In addition, because the flexible permit is being reviewed pursuant to a PSD review process that will establish BACT emission control requirements and federally enforceable emission limits, future changes within the scope of the advance approvals will not trigger major NSR. The advance approval provisions will also require Lilly to follow any pre-construction requirements of the NSPS, NESHAP, and MACT general provisions if applicable.

Advance approvals are specifically authorized under Indiana's Title V program rules at 326 IAC 2-7-5(16) and alternative operating scenarios are authorized pursuant to 326 IAC 2-7-5(9). The advance approval provisions found at 326 IAC 2-7-5(16) also authorize the use of advance approvals in Title V permits as a mechanism to eliminate review procedures of the minor New Source Review requirements of 326 IAC 2-7-10.5. Emission limits or other standards that would be applicable under minor NSR remain applicable.

The permit will allow the use of advance approval provisions for the following types of modifications to take place in the existing BCM and BCM support operations: production of new products and intermediates; process changes for existing products; replacement of existing production equipment with similar equipment, new equipment additions to existing process operations, and replacement of existing production buildings.

The permit will allow the types of changes listed below (and others meeting the requirements of the permit) to occur under the advance approval scheme.

(a) BCM Process Operations:

(1) A change in bulk pharmaceutical products or intermediate products manufactured;
(2) A change in raw materials stored and utilized;
(3) A change in the method of operation to a process or existing equipment;
(4) Piping changes, including but not limited to, process piping, waste piping and fume transport piping;
(5) A physical change to existing equipment;
(6) Reconstruction or replacement of existing equipment, including but not limited to, process tanks, crystallizers, distillation operations, filters, centrifuges, and dryers;
(7) Installation of new equipment, including but not limited to, process tanks, crystallizers, distillation operations, filters, centrifuges, and dryers; and
(8) Reconstruction or replacement of existing production buildings.

(b) BCM Support Operations:

(1) A change in solvent material recovered;
(2) A change in raw materials stored and utilized;
(3) A change in the method of operation to a process or existing equipment;
(4) Piping changes, including but not limited to, process piping, waste piping and fume transport piping;
(5) A physical change to existing equipment;
(6) Reconstruction or replacement of existing equipment, including but not limited to, process tanks, receivers, stills, storage tanks, and container transfer operations;
(7) Installation of new equipment, including but not limited to, process tanks, receivers, stills, storage tanks, and container transfer operations;
(8) Reconstruction or replacement of existing solvent recovery operations, storage tanks, storage tank modules, and distillation operations; and
(9) Installation of new solvent recovery operations, storage tanks, storage tank modules, and distillation operations.

(c) T49 liquid waste incinerator and T149 solids-liquid waste incinerator:

(1) A change in waste materials disposed in the incinerators that does not affect compliance with 40 CFR 63, Subpart EEE or RCRA Part B permit requirements;
(2) A change in the use of portable containers, including but not limited to, drums, melons, and tank trailers;
(3) A change in the method of operation that does not affect compliance with 40 CFR 63, Subpart EEE;
(4) Piping changes;
(5) A physical change that does not affect compliance with 40 CFR 63, Subpart EEE;
(6) Reconstruction or replacement of incinerator components and support equipment, including but not limited to, cooling towers and waste container management;

(7) Installation of new incinerator equipment components, support equipment or emission control equipment.

Condition F.1.2 establishes the basic elements of the advance approval program (types of changes, applicable requirements for the changes) in the permit. Condition F.1.11 establishes the record keeping requirements for changes made pursuant to the flexible permit provisions. Condition F.1.12 establishes the notification requirements for advance approved changes.

BACT Requirements:
The use of the BACT determination for anticipated future changes depends on two factors. First, under the Indiana PSD regulations, modifications must occur without an interruption of greater than 18 months in order for the BACT determination to remain valid for the future changes. Tippecanoe Laboratories expects to make modifications on a fairly regular basis and does not expect 18 months to pass between any modifications.

Second, the BACT determination would expire at the end of the flexible permit term. As part of a Title V permit, the flexible permit would expire in five years. As part of the Title V permit renewal process, Lilly will reevaluate the BACT determination for the areas of the site undergoing modifications in the future. Upon expiration of the Title V permit, the major NSR rules in effect at that time would govern the applicability and requirements to changes made at the site.

The BACT determination for this permit is described in greater detail elsewhere in this TSD. The BACT controls also assure compliance with other applicable requirements that apply to BCM and the associated operations. For example, the Regenerative Thermal Oxidizers (RTOs), which control VOC and organic HAP emissions from the BCM production buildings, not only constitute BACT, but also assure Tippecanoe Laboratories will comply with the Pharmaceutical Production MACT (40 CFR Part 63, Subpart GGG), and an Indiana VOC RACT regulation for synthesized pharmaceutical manufacturing operations (326 IAC 8-5-3).

The BACT requirements of the permit can be found in the specific sections of the permits establishing emission limitations for operating areas.

Emission Limits: The flexible permit utilizes emission caps for the five pollutants CO, F-, NOx, SO2, and VOC, as a mechanism to establish boundaries on the extent of the changes that can occur under the advance approval provisions. The caps apply to all the areas under the flexible permit that could expect to see emission increases as a result of modifications that would occur in the BCM production areas and support operations. The caps will apply to emissions from BCM production buildings, solvent storage and recovery, waste solvent storage, BCM wastewater treatment, and the liquid/solid waste incinerators.

The emission caps are set at a level that assures protection of the National Ambient Air Quality Standards and PSD increments. Compliance with these requirements is discussed in greater detail in the Air Quality Analysis section of this TSD.

The emission caps are based on Evonik's estimate of the emission increases that could be expected under various product mixes and production rates. In order to assure the greatest flexibility for Tippecanoe Laboratories, the caps apply to all the emission units under the flexible permit in the aggregate. This approach will allow the greatest flexibility to the site operations and assure air quality standards are still protected.

Tippecanoe Laboratories will demonstrate compliance with the emission caps through a variety of techniques, including continuous emissions monitoring systems (CEMS), stack testing, and engineering calculations.

The emission limits are in Condition F.1.1 of the permit. The compliance demonstration systems are described in Conditions F1.3 through F1.7. Record keeping and reporting requirements for the emission caps are in Condition F.1.9.

Streamlining of requirements: The fundamental aspects of the Tippecanoe Laboratories flexible permit are the advance approval provisions, the BACT requirements, and the emission caps. These features work in conjunction to provide flexibility and assure compliance with applicable requirements and air quality standards.

In addition to providing the flexibility to make changes quickly, the Title V permit will also reduce or eliminate administrative duplication and promote simplicity for compliance. This will be accomplished in part by condensing or streamlining similar emission limitations and standards that apply to the same emission units. This concept is recognized by USEPA in Title V Implementation White Paper 2 and in Indiana's Title V regulations at 326 IAC 2-7-24.

For example, the BCPM production buildings may be manufacturing pharmaceutical and specialty chemical processes at the same time. Therefore, the buildings are subject to five regulatory and permit requirements that require the use of high efficiency emission control systems: (1) BACT requirements of this flexible permit; (2) 326 IAC 8-5-3 or alternatively 326 IAC 8-1-6 BACT; and (3) Pharmaceutical Production MACT; (4) MON; and (5) SOCMI HON. All five of these requirements establish control requirements for VOC or organic HAP emissions. By distilling the multiple and overlapping requirements into a single requirement that represents the most stringent requirements, the permit will assure compliance with all five requirements. The specific streamlining actions are described in greater detail in the TSDs for the specific operating areas utilizing this program.

Flexible Permit Summary

Operating area/emission units	Pollutant	Control device(s)	Emissions cap (tpy)[1]	Compliance Monitoring	Advance Approval
BCM - including T146 tank module, which vents to RTO/RTO Scrubbers (control device - RTO/RTO Scrubbers)	VOC point	RTOs	300	TOC monitor	Terms to require all new and modified equipment to meet BACT controls, other applicable requirements, and stay within emission limits
	VOC fugitive	LDAR		Mass Balance	
	CO	RTOs	150	CO monitor	
	NOx	Good combustion controls from 2004 flexible permit - BACT not reevaluated because of NOx PAL	300[2]	NOx Monitor	
	SO2	RTO scrubbers from 2004 flexible permit - BACT not reevaluated because of SO2 PAL	300[2]	SO2 Monitor	
	Fluorides	RTO scrubbers	6	Stack Test and Calculation	
BCM support operations including solvent recovery, storage tanks, BCM WWT emissions (control device - T79 Fume Incinerator/T79 Scrubbers)	VOC point	T79	300	Stack Test and Calculation	Terms to require all new and modified equipment to meet BACT controls, where applicable, other applicable requirements, and stay within emission limits.
	VOC fugitive	LDAR		Calculation	
	CO	Not required - CO is not emitted directly by support equipment - emitted by control device.	150 (30 sub-limit)	Calculation	
	SO2	Not required - SO2 not emitted directly by support equipment - emitted by control device.	300[2] (5 sub-limit)	Calculation	
	NOx	Not required - NOx is not emitted directly by support equipment - emitted by control device	300[2] (30 sub limit)	Calculation	
	Fluorides	Not required - fluorides not emitted directly by support equipment - emitted by control device.	6 (2 sub-limit)	Calculation	
T49 liquid waste incineration (Control device - scrubbers)	VOC point	Good combustion practice	300	CO monitor as surrogate	Terms to require equipment to continue complying with BACT controls, other applicable requirements, and stay within emission limits.
	CO	Good combustion practice	150	CO monitor	
	SO2	Caustic scrubber from 2004 flexible permit - BACT not reevaluated because of SO2 PAL	300[2]	SO2 monitor	
	NOx	Good combustion practice from 2004 flexible permit - BACT not reevaluated because of NOx PAL	300[2]	NOx monitor	
	Fluorides	Caustic Scrubbers	6	Calculation	
T149 solid-liquid waste incinerator (Control device - scrubbers, SNCR)	VOC point	Good combustion practice	300	CO monitor as surrogate	Terms to require equipment to continue complying with BACT controls, other applicable requirements, and stay within emission limits.
	CO	Good combustion practice	150	CO monitor	
	SO2	Caustic scrubber from 2004 flexible permit - BACT not reevaluated because of SO2 PAL	300[2]	SO2 Monitor	
	NOx	Good combustion practice from 2004 flexible permit - BACT not reevaluated because of NOx PAL	300[2]	NOx Monitor	
	Fluorides	Caustic Scrubbers	6	SO2 Monitor	

[1] Emission limits are the sum of all of the emission points identified above, excluding utilities
[2] The emission caps for NOx and SO2 are currently being evaluated as part of the Air Quality and Additional Impact Analyses associated with this PSD application. The emission caps proposed in this table may be adjusted based on the results of those analyses.

Table C-1. RTO Cost Analysis Design Parameters

RTO STREAM CHARACTERISTICS

Exhaust gas Temperature	107	°F	*Exhaust gas temperature from modeling data*
Standard Temperature	77	°F	*OAQPS CCM, Section 3.2, Chapter 2, Table 2.5.*
Density of air	0.0739	lb/scf	*OAQPS CCM, Section 3.2, Chapter 2, Table 2.5.*
Molecular Weight of Air	28.964	lb/lb-mole	
Exhaust Gas Flowrate	97,450	acfm	*Maximum exhaust flow rate of the RTO*
	92,291	scfm	*Calculated*
Max Flowrate for RTO Cost Correlation	100,000	acfm	*OAQPS CCM, Section 3.2, Chapter 2, p 2-38. (see footnote 1).*
Exhaust Gas Concentration VOC	20.00	ppmv	*BACT limit*
VOC Molecular Weight, as carbon	32	lb/lb-mole	*Molecular weight used for RTO bypass event calculations*
VOC emissions	39.61	tpy	*Calculated*

Table C-2. RTO Cost Analysis for VOC

Capital Cost[a]			**OAQPS Notation**[a]
Purchased Equipment Costs			
RTO Cost[b]	$	1,857,836	a
Auxiliary Equipment Cost	$	-	b
Total Equipment Cost	$	1,857,836	A = a + b
Instrumentation[c]	$	185,784	0.10 × (A)
Sales Tax[d]	$	55,735	0.03 × (A)
Freight[d]	$	92,892	0.05 × (A)
Total Purchased Equipment Costs, PEC	*$*	*2,192,246*	*B = 1.18 × (A)*
Direct Installation Costs			
Foundations and Supports[d]	$	175,380	0.08 × B
Handling and Erection[d]	$	306,914	0.14 × B
Electrical[d]	$	87,690	0.04 × B
Piping[d]	$	43,845	0.02 × B
Insulation[d]	$	21,922	0.01 × B
Painting[d]	$	21,922	0.01 × B
Total Direct Installation Costs	*$*	*657,674*	*C = 0.3× B*
Indirect Installation Costs			
Engineering[d]	$	219,225	0.10 × B
Construction and Field Expense[d]	$	109,612	0.05 × B
Contractor Fees[d]	$	219,225	0.10 × B
Start-up[d]	$	43,845	0.02 × B
Performance Test[d]	$	21,922	0.01 × B
Contingencies[d]	$	65,767	0.03 × B
Total Indirect Installation Costs	*$*	*679,596*	*D = 0.31 × B*
Total Capital Investment[e]	**$**	**3,529,516**	**TCI = B + C + D**

Table C-2. RTO Cost Analysis for VOC

Operating Cost				OAQPS Notation
Direct Annual Costs				
	Operating Labor (0.5 hr, per 8-hr shift)[f]	$	-	E
	Supervisory Labor[f]	$	-	F = 0.15 × E
	Maintenance Labor (0.5 hr, per 8-hr shift)[f]	$	-	G
	Maintenance Materials[f]	$	-	H = G
	Natural Gas Cost[g]	$	-	I
	Electricity[h, j]	$	-	J
		$	-	
Total Direct Annual Costs		*$*	-	*DAC = E + F + G + H + I + J*
Indirect Annual Costs				
	Overhead[f]	$	-	M = 0.60 × (E + F + G + H)
	Administrative Charges[f]	$	-	N = 0.02 × TCI
	Property Tax[f]	$	-	O = 0.01 × TCI
	Insurance[f]	$	-	P = 0.01 × TCI
	Capital Recovery[i]	$	574,412.46	CRC_S = TCI x CRF
Total Indirect Annual Costs		*$*	*574,412*	*IDAC = M + N + O + P + CRC*
Total Annual Cost		**$**	**574,412**	*TAC = DAC + IDAC*

a. Capital cost factors taken from OAQPS Cost Control Manual (CCM) - U.S. EPA, Office of Air Quality Planning and Standards (OAQPS), EPA Air Pollution Control Cost Manual, 6th Ed (Research Triangle Park, NC: U.S. EPA EPA/452/B-02-00, 2002) Section 3.2, Chapter 2.5. (http://www.epa.gov/ttn/catc/products.html#cccinfo).

b. OAQPS CCM, Section 3.2, Chapter 2, p 2-38. (see footnote 1). The equipment cost correlation has an upper bound of 100,000 acfm at 95% heat recovery. Cost scaled from 1999 dollars.

c. According to footnote b to OAQPS CCM Section 3.2, Chapter 2, Table 2.8, instrumentation and controls are often furnished with incinerators and are often included in the equipment cost.

d. Values based on percentages specified in OAQPS Manual, Section 3.2, Chapter 2, Table 2.8

e. TCI is sum of purchased equipment costs and installation costs. Note, in actuality, costs could be higher due to use of existing infrastructure.

f. Costs assumed to be equivalent to existing RTO, so no increase is calculated.

g. Costs assumed to be equivalent to existing RTO, so no increase is calculated.

h. Costs assumed to be equivalent to existing RTO, so no increase is calculated.

i. The capital recovery factor is calculated according to OAQPS CCM Section 1, Chapter 2, Equation 2.8a using an interest rate of 10% and a 10-year equipment lifespan as described in footnote c to OAQPS CCM Section 3.2, Chapter 2, Table 2.10

j Costs assumed to be equivalent to existing RTO, so no increase is calculated.

Annual Control Cost per Oxidizer ($/100,000 acfm oxidizer, in 2012 $)	**$**	**574,412**
Total Air Flow (acfm)		**97,450**
Number of Oxidizers Needed to Process Total Airflow		**1**
Pollutant to be removed at 100% capture and 98% control efficiency (tpy)[k]		**19.80**
Control Cost Effectiveness (2012 $/ton)	**$**	**29,007**

k Based on baseline of 98% control shifted to 99% control. Baseline controls at 98% calculated using 20 ppm and the RTO maximum airflow rate.

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Commissioner

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TO: Teresa Reksel
Evonik Corporation Tippecanoe Laboratories
1650 Lilly Rd TL72
Lafayette, IN 47909-9201

DATE: March 4, 2015

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Title V - Renewal
157 - 33448 - 00006

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Clive Whiteside, VP/ Site Mgr
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 6/13/2013

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Governor

Thomas W. Easterly
Commissioner

March 4, 2015

TO: Tippecanoe County Public Library 627 South Street Lafayette IN

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Evonik Corporation Tippecanoe Laboratories
Permit Number: 157 - 33448 - 00006

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 6/13/2013

Mail Code 61-53

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2		Clive Whiteside VP/ Site Mgr Evonik Corporation- Tippecanoe Laboratories 1650 Lilly Rd TL72 Lafayette IN 47909-9201 *(RO CAATS)*									
3		Tippecanoe County Commissioners 20 N 3rd St, County Office Building Lafayette IN 47901 *(Local Official)*									
4		Tippecanoe County Health Department 20 N. 3rd St Lafayette IN 47901-1211 *(Health Department)*									
5		Lafayette City Council and Mayors Office 20 North 6th Street Lafayette IN 47901-1411 *(Local Official)*									
6		Tippecanoe County Public Library 627 South Street Lafayette IN 47901-1470 *(Library)*									
7		Ms. Geneva Werner 3212 Longlois Drive Lafayette IN 47904-1718 *(Affected Party)*									
8		Mrs. Phyllis Owens 3600 Cypress Lane Lafayette IN 47905 *(Affected Party)*									
9		Mr. Jerry White 4317 Amesbury Drive West Lafayette IN 47906 *(Affected Party)*									
10		Ms. Rose Filley 5839 Lookout Drive West Lafayette IN 47906 *(Affected Party)*									
11		Mr. William Cramer 128 Seminole Drive West Lafayette IN 47906 *(Affected Party)*									
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