DISCLAMER:

This document reflects the current work product for the Draft Proposed Rulemaking for the Oil and Gas CTG as of November 14, 2018. This document has not been fully converted into Legislative Reference Bureau format and should not be construed as the final regulatory form.

INTERIM DRAFT FOR REVIEW

DRAFT PROPOSED RULEMAKING
Annex A
TITLE 25. ENVIRONMENTAL PROTECTION
PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION
Subpart C. PROTECTION OF NATURAL RESOURCES
ARTICLE III. AIR RESOURCES

CHAPTER 121. GENERAL PROVISIONS

§ 121.1. Definitions.

The definitions in section 3 of the act (35 P. S. § 4003) apply to this article. In addition, the following words and terms, when used in this article, have the following meanings, unless the context clearly indicates otherwise:

Responsible official—An individual who is:

(i) For a corporation: a president, secretary, treasurer or vice president of the corporation in charge of a principal business function, or another person who performs similar policy or decision making functions for the corporation, or an authorized representative of the person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for, or subject to, a permit and one of the following applies:

(A) The facility employs more than 250 persons or has gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars).

(B) The delegation of authority to the representative is approved, in advance, in writing, by the Department.

(ii) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.

(iii) For a municipality, State, Federal or other public agency: a principal executive officer or ranking elected official. A principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency—for example, a regional administrator of the EPA.

(iv) For affected sources:

(A) The designated representatives in so far as actions, standards, requirements or prohibitions under Title IV of the Clean Air Act (42 U.S.C.A. §§ 7641 and 7642) or the regulations thereunder are concerned.

(B) The designated representative or a person meeting provisions of subparagraphs (i)—(iii) for any other purpose under **40 CFR Part 60 (relating to standards of performance for new stationary sources),** 40 CFR Part 70 (relating to operating permit programs) or Chapter 127 (relating to construction, modification, reactivation and operation of sources).

CHAPTER 129. STANDARDS FOR SOURCES

Control of VOC Emissions from the Oil and Natural Gas Industry

§ 129.121. General provisions.

(a) *Applicability.* Beginning *blank* (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking as a final-form rulemaking.), this section and §§ 129.122—129.131 apply statewide to an owner and operator of one or more of the following sources of VOC emissions in the oil and natural gas industry which were in existence on or before *blank* (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking as a final-form rulemaking.):

(1) Storage vessels in all segments except natural gas distribution.

(2) Natural gas-driven pneumatic controllers.

(3) Natural gas-driven diaphragm pumps.

(4) Centrifugal compressors and reciprocating compressors.

(5) Fugitive emission components.

(b) *Initial notification*. Each owner and operator of a source subject to this section and §§ 129.122—129.131 shall notify the Department of being subject within 90 days of the effective date of this proposed rulemaking or within 90 days of becoming subject. The notification shall be sent to the Air Program Manager at the appropriate Regional Office and include all of the following information:

(1) The name and address of the owner or operator of the source.

(2) The type of source.

(3) The location of the source, including all of the following:

(i) The nearest street address.

(ii) The latitude and longitude or digital photograph.

(4) The number of each type of source at each location.

(c) *Existing permit*. Compliance with the requirements of this section and §§ 129.122—129.131 assures compliance with the requirements of an operating permit issued under §§ 129.91—129.95 (relating to stationary sources of NOx and VOCs) to the owner or operator of a source subject to subsection (a) prior to August 23, 2011, to control, reduce or minimize VOCs from oil and natural gas sources listed in subsection (a), except to the extent the operating permit contains more stringent requirements.

(d) *Exemption 38*. The requirements of this section and §§ 129.122—129.131 supersede the requirements of Air Quality Exemptions Number 38 (TGD No. 275-2101-003) for the owner or operator of a source subject to subsection (a) in existence prior to August 10, 2013, to control, reduce or minimize VOCs from oil and natural gas sources listed in subsection (a), except to the extent the Exemption 38 contains more stringent requirements.

(e) *NSPS OOOOa*. Compliance with NSPS OOOOa assures compliance with this section and §§ 129.122—129.131.

§ 129.122. Definitions, acronyms, EPA methods, and abbreviations.

(a) *Definitions*. The following words and terms, when used in this section, §§ 129.121 (relating to general provisions) and §§ 129.123—129.131, have the following meanings, unless the context clearly indicates otherwise:

Bleed rate—The rate in standard cubic feet per hour at which natural gas is continuously vented (bleeds) from a pneumatic controller.

Centrifugal compressor—

(i) A machine for raising the pressure of natural gas by drawing in low-pressure natural gas and discharging significantly higher pressure natural gas by means of mechanical rotating vanes or impellers.

(ii) The term does not include all of the following:

(A) Screw compressors.

(B) Sliding vane compressors.

(C) Liquid ring compressors.

Closed vent system—A system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back to a process.

Collection system—Infrastructure that conveys gas or liquids from the well site to another location for treatment, storage, processing, recycling, disposal or other handling.

Completion combustion device—

(i) An ignition device, installed horizontally or vertically, used in exploration and production operations to combust otherwise vented emissions from completions.

(ii) The term includes pit flares.

Compressor station—

(i) A permanent combination of one or more compressors that move natural gas at increased pressure through gathering or transmission pipelines, or into or out of storage.

(ii) The term includes gathering and boosting stations and transmission compressor stations.

(iii) The term does not include the combination of one or more compressors located at a well site or located at an onshore natural gas processing plant.

Condensate—Hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature, pressure, or both, and remains liquid at standard conditions.

Connector—

(i) A flanged fitting, screwed fitting or other joined fitting used to connect two pipe lines or a pipe line and a piece of process equipment or that close an opening in a pipe that could be connected to another pipe.

(ii) The term does not include a joined fitting welded completely around the circumference of the interface.

Continuous bleed—A continuous flow of pneumatic supply natural gas to a pneumatic controller.

Control device—An enclosed combustion device, vapor recovery system or flare.

Custody transfer—The transfer of natural gas after processing or treatment, or both, in the producing operation or from a storage vessel or an automatic transfer facility or other equipment, including a product loading rack, to a pipeline or another form of transportation.

Deviation—An instance in which the owner or operator of a source subject to this section, §§ 129.121 and 129.123—129.131, or a source subject to this section, §§ 129.121 and 129.123—129.131:

(i) Fails to meet a requirement or an obligation established in this section, § 129.121 or §§ 129.123—129.131, including an emission limit, operating limit or work practice standard.

(ii) Fails to meet a term or condition that is adopted to implement an applicable requirement in this section, § 129.121 or §§ 129.123—129.131 and which is included in the operating permit for the affected source.

(iii) Fails to meet an emission limit, operating limit or work practice standard in this section, § 129.121 or §§ 129.123—129.131 during startup, shutdown or malfunction, regardless of whether a failure is permitted by this section, § 129.121 or §§ 129.123—129.131.

Double block and bleed system—Two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Empty storage vessel—

(i) A tank or other container that no longer contains crude oil, condensate, produced water or intermediate hydrocarbon liquids.

(ii) The term includes a tank or other container where liquid is left on walls, as bottom clingage or in pools due to floor irregularity.

First attempt at repair—Action taken for the purpose of stopping or reducing leakage of organic material to the atmosphere using best practices.

Flare—

(i) A thermal oxidation system using an open flame without an enclosure.

(ii) The term does not include completion combustion devices.

Flow line—A pipeline used to transport oil or gas, or both, to a processing facility or a mainline pipeline.

Fuel gas—Gases that are combusted to derive useful work or heat.

Fuel gas system—The offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Fugitive emissions—Emissions originating from other than the vent, stack or chimney such as the thief hatch on a controlled storage vessel.

Fugitive emissions component—

(i) A part or piece of equipment that has the potential to emit fugitive emissions of VOC at a well site or gathering and boosting station including valves, connectors, pressure relief devices, open-ended lines, flanges, covers and closed vent systems not subject to §§ 129.123(h)(3) or (4) or 129.128, thief hatches or other openings on a controlled storage vessel not subject to § 129.123 (relating to storage vessels), compressors, instruments and meters.

(ii) The term does not include devices that vent as part of normal operations, such as natural gas-driven pneumatic controllers or natural gas-driven pumps, if the gas is discharged from the device's vent.

GOR—Gas to oil ratio—The ratio of the volume of gas at standard temperature and pressure that is produced from a volume of oil when depressurized to standard temperature and pressure.

Gathering and boosting station—

(i) A permanent combination of one or more compressors that collects natural gas from well sites and moves the natural gas at increased pressure into gathering pipelines to the natural gas processing plant or into the pipeline.

(ii) The term does not include the combination of one or more compressors located at a well site or located at an onshore natural gas processing plant.

Hard-piping—Pipe or tubing that is manufactured and properly installed using good engineering judgment and standards.

Hydraulic fracturing—The process of directing pressurized fluids containing a combination of water, proppant and added chemicals to penetrate tight formations, such as shale or coal formations, that subsequently require high rate, extended flowback to expel fracture fluids and solids during completions

Hydraulic refracturing—Conducting a subsequent hydraulic fracturing operation at a well that has previously undergone a hydraulic fracturing operation.

Initial calibration value—

(i) The initial concentration measured by the monitoring instrument at the beginning of each day.

(ii) The most recent concentration measured if the monitoring instrument is recalibrated during the day after a calibration drift assessment.

Intermediate hydrocarbon liquid—A naturally occurring, unrefined petroleum liquid.

Liquids dripping—Visible leakage from the seal including spraying, misting, clouding or ice formation.

Maximum average daily throughput—The single highest daily average throughput during the 30-day PTE evaluation period employing generally accepted methods.

Monitoring malfunction—A sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. The term does not include a system failure caused by poor maintenance or careless operation.

Natural gas and oil production—

(i) The well and all related processes used in the extraction, production, recovery, lifting, stabilization, separation or treating of natural gas, including condensate, or oil and collection and transport of the natural gas, oil and other materials and wastes from the well to the natural gas processing plant or refinery.

(ii) The term does not include either of the following:

(A) Natural gas processing plants.

(B) Refineries.

Natural gas distribution—The delivery of natural gas to the end user by a distribution company after the distribution company receives the natural gas from the natural gas transmission and storage company.

Natural gas-driven diaphragm pump—

(i) A positive displacement pump powered by pressurized natural gas that uses the reciprocating action of flexible diaphragms in conjunction with check valves to pump a fluid.

(ii) The term does not include either of the following:

(A) A pump in which a fluid is displaced by a piston driven by a diaphragm.

(B) A lean glycol circulation pump that relies on energy exchange with the rich glycol from the contactor.

Natural gas-driven pneumatic controller—A pneumatic controller powered by pressurized natural gas.

Natural gas liquids—The hydrocarbons, such as ethane, propane, butane and pentane that are extracted from field gas.

Natural gas processing plant or *gas plant*—

(i) A processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both.

(ii) The term does not include a Joule-Thompson valve, a dew point depression valve or an isolated or stand-alone Joule-Thompson skid.

Natural gas processing—The separation and recovery of natural gas liquids or other non-methane gases and liquids from a stream of produced natural gas.

Natural gas transmission—

(i) The pipelines used for the long-distance transport of natural gas, excluding processing.

(ii) The term includes the land, mains, valves, meters, boosters, regulators, storage vessels, dehydrators, compressors, and their driving units and appurtenances, and equipment used for transporting gas from a production plant, delivery point of purchased gas, gathering system, storage area or other wholesale source of gas to one or more areas of distribution area.

Natural gas transmission and storage—The pipelines, compressor stations, and aboveground storage facilities and underground storage facilities that transport and store natural gas between the natural gas processing location and natural gas distribution-company.

Non-fractionating plant—A gas plant that does not separate mixed natural gas liquids into natural gas products.

Non-natural gas-driven pneumatic controller—An instrument that is actuated using other sources of power than pressurized natural gas, including solar, electric and instrument air.

Open-ended valve or line—A valve, except a safety relief valve, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Pneumatic controller—An automated instrument used for maintaining a process condition such as liquid level, pressure, delta-pressure or temperature.

Pressure release—The emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Pressure vessel—A tank that is used to store liquids or gases and is designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to its design capacity.

Process unit shutdown—

(i) A work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety constraints and during which repairs can be accomplished.

(ii) The term does not include all of the following:

(A) An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours.

(B) An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown.

(C) The use of spare equipment and technically feasible bypassing of equipment without stopping production

Produced water—Water that is extracted from the earth from an oil or natural gas production well or that is separated from crude oil, condensate or natural gas after extraction.

Qualified professional engineer—

(i) An individual who is licensed by a state as a Professional Engineer to practice one or more disciplines of engineering and who is qualified by education, technical knowledge and experience to make the required specific technical certifications.

(ii) The individual making these certifications must be currently licensed in at least one state in which the responsible official is located.

Quarter—A 3-month period.

Reciprocating compressor—A piece of equipment that employs linear movement of a driveshaft to increase the pressure of a process gas by positive displacement.

Reciprocating compressor rod packing—

(i) A series of flexible rings in machined metal cups that fit around the reciprocating compressor piston rod to create a seal limiting the amount of compressed natural gas that escapes to the atmosphere.

(ii) Another mechanism that provides the same function.

Removed from service—A storage vessel that has been physically isolated and disconnected from the process for a purpose other than maintenance.

Repaired—Equipment that is adjusted or otherwise altered to eliminate a leak and is re-monitored to verify that emissions from the equipment are below the applicable leak definition.

Returned to service—A storage vessel that was removed from service which has been:

(i) Reconnected to the original source of liquids or has been used to replace another storage vessel.

(ii) Installed in another location and introduced with crude oil, condensate, intermediate hydrocarbon liquids or produced water.

Routed to a process or *route to a process*—The emissions are conveyed via a closed vent system to an enclosed portion of a process that is operational where the emissions are controlled in one or more of the following ways:

(i) Predominantly recycled or consumed, or both, in the same manner as a material that fulfills the same function in the process.

(ii) Transformed by chemical reaction into materials that are not regulated materials.

(iii) Incorporated into a product.

(iv) Recovered for beneficial use.

Sampling connection system—

(i) An assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid.

(ii) The term does not include equipment used to take nonroutine grab samples.

Sensor—A device that measures a physical quantity or the change in a physical quantity such as temperature, pressure, flow rate, pH or liquid level.

Storage vessel—

(i) A tank or other container that contains an accumulation of crude oil, condensate, intermediate hydrocarbon liquids or produced water, and that is constructed primarily of non-earthen materials, such as wood, concrete, steel, fiberglass or plastic which provide structural support.

(ii) The term includes a tank or other container that is skid-mounted or permanently attached to something that is mobile, such as a truck, railcar, barge or ship, for which records are not available to document that it has been located at a site for less than 180 consecutive days.

(iii) The term does not include all of the following:

(A) A tank or other container that has been removed from service in accordance with the requirements of § 129.123(e) until the tank or other container has been returned to service.

(B) A tank or other container that is skid-mounted or permanently attached to something that is mobile, such as a truck, railcar, barge or ship, and is located at a site for less than 180 consecutive days.

(C) A process vessel such as a surge control vessel, bottoms receiver or knockout vessel.

(D) A pressure vessel designed to operate in excess of 204.9 kilopascals (29.7 psia) and without emissions to the atmosphere.

(E) A tank or other container with a capacity greater than 100,000 gallons used to recycle water that has been passed through two stage separation.

Surface site—A combination of one or more graded pad sites, gravel pad sites, foundations, platforms or the immediate physical location upon which equipment is physically affixed.

Underground storage vessel—A storage vessel stored below ground.

VRU—Vapor recovery unit—A device used to route vapors from a storage or other vessel either back to the vessel or to a line carrying hydrocarbon fluids.

Well—A hole drilled for producing oil or natural gas or into which fluids are injected.

Wellhead—

(i) The piping, casing, tubing and connected valves protruding above the earth's surface for an oil or natural gas well.

(ii) The wellhead ends where the flow line connects to a wellhead valve.

(iii) The term does not include other equipment at the well site except for a conveyance through which gas is vented to the atmosphere.

Well site—

(i) One or more surface sites that are constructed for the drilling and subsequent operation of an oil well, natural gas well or injection well.

(ii) For purposes of the fugitive emissions standards in § 129.127 (relating to fugitive emissions components), the term also means a separate tank battery surface site collecting crude oil, condensate, intermediate hydrocarbon liquids or produced water from wells not located at the well site, for example, centralized tank batteries.

Zero air—A calibration gas with less than 10 ppmv hydrocarbon in air.

(b) *EPA methods.* The EPA methods referenced in this section, §§ 129.121 and 129.123—129.131, are those listed below, unless the context clearly indicates otherwise:

EPA Method 1—EPA Method 1, 40 CFR Part 60, Appendix A, regarding sample and velocity traverses for stationary sources.

EPA Method 1A—EPA Method 1A, 40 CFR Part 60, Appendix A, regarding sample and velocity traverses for stationary sources with small stacks or ducts.

EPA Method 2—EPA Method 2, 40 CFR Part 60, Appendix A-2, regarding direct measurement of gas volume through pipes and small ducts.

EPA Method 2A—EPA Method 2A, 40 CFR Part 60, Appendix A-2, regarding direct measurement of gas volume through pipes and small ducts.

EPA Method 2C—EPA Method 2C, 40 CFR Part 60, Appendix A-2, regarding determination of gas velocity and volumetric flow rate in small stacks or ducts (standard pitot tube).

EPA Method 2D—EPA Method 2D, 40 CFR Part 60, Appendix A-2, regarding measurement of gas volume flow rates in small pipes and ducts.

EPA Method 3A—EPA Method 3A, 40 CFR Part 60, Appendix A-2, regarding determination of oxygen and carbon dioxide concentrations in emissions from stationary sources (instrumental analyzer procedure).

EPA Method 3B—EPA Method 3B, 40 CFR Part 60, Appendix A-2, regarding gas analysis for the determination of emission rate correction factor or excess air.

EPA Method 3C—EPA Method 3C, 40 CFR Part 60, Appendix A-2, regarding determination of carbon dioxide, methane, nitrogen and oxygen from stationary sources.

EPA Method 4—EPA Method 4, 40 CFR Part 60, Appendix A-3, regarding determination of moisture content in stack gases.

EPA Method 10—EPA Method 10, 40 CFR Part 60, Appendix A-4, regarding determination of carbon monoxide emissions from stationary sources.

EPA Method 18—EPA Method 18, 40 CFR Part 60, Appendix A-6, regarding measurement of gaseous organic compound emissions by gas chromatography.

EPA Method 21—EPA Method 21, 40 CFR Part 60, Appendix A-7, regarding determination of volatile organic compound leaks.

EPA Method 22—EPA Method 22, 40 CFR Part 60, Appendix A-7, regarding visual determination of fugitive emissions from material sources and smoke emissions from flares.

EPA Method 25A—EPA Method 25A, 40 CFR Part 60, Appendix A-7, regarding determination of total gaseous organic concentration using a flame ionization analyzer.

(c) *Abbreviations*. The following abbreviations, when used in this section, §§ 129.121 and 129.123—129.131, have the following meanings, unless the context clearly indicates otherwise:

AVO—Audible, visual, and olfactory.

GC-TCD—Gas chromatograph-thermal conductivity detector.

LDAR—Leak detection and repair.

OGI—Optical gas imaging.

ppm—Parts per million.

ppmv—Parts per million, by volume.

ppmvd—Parts per million, by volume-dry.

ppmvw—Parts per million by volume-wet.

Pneumatic controller—Natural gas-driven pneumatic controller.

Pneumatic pump—Natural gas-driven diaphragm pump.

psia—Pounds per square inch, absolute.

scf—Standard cubic feet.

TOC—Total organic compounds.

§ 129.123. Storage vessels.

(a) *Applicability.*

(1) *Potential to emit VOC emissions.* Except as specified in subsections (b), (e) and (g), this section applies to the owner and operator of each storage vessel subject to § 129.121(a)(1) (relating to general provisions) that meets either of the following:

(i) Is installed before August 10, 2013, and has the potential to emit VOC emissions equal to or greater than 6 tpy.

(ii) Is installed on or after August 10, 2013, and has VOC emissions equal to or greater than 2.7 tpy.

(2) *Calculation of potential to emit VOC emissions.*

(i) The potential to emit VOC emissions in paragraph (1) must be calculated using a generally accepted model or calculation methodology, based on the maximum average daily throughput determined for a 30-day period of production prior to the following:

(A) *Blank* (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking as a final-form rulemaking.) for an existing storage vessel.

(B) The date that the storage vessel becomes subject to paragraph (1)(ii).

(ii) The determination of potential to emit VOC emissions must consider requirements under a legally and practically enforceable limit established in an operating permit or plan approval approved by the Department.

(iii) Vapor from the storage vessel that is recovered and routed to a process through a VRU designed and operated as specified in this section is not required to be included in the

determination of VOC potential to emit for purposes of determining applicability, if the owner or operator meets all of the following:

(A) The cover requirements in subsection (h)(3).

(B) The closed vent system requirements in subsection (h)(4).

(C) The recordkeeping requirements in subsection (j).

(iv) If the apparatus that recovers and routes vapor to a process is removed from operation or is operated inconsistently with subsections (h)(3) and (4), the owner or operator shall determine the storage vessel's potential to emit VOC emissions within 30 days of the date of apparatus removal or inconsistent operation.

(b) *Requirements for a storage vessel with uncontrolled actual VOC emissions less than 4 tpy.* Subsections (h)—(j) do not apply to the owner or operator of a storage vessel subject to subsection (a)(1)(i) if the uncontrolled actual VOC emissions from the storage vessel are less than 4 tpy, before consideration of controls and the owner or operator performs all of the following:

(1) Maintains the uncontrolled actual VOC emissions from the storage vessel at less than 4 tpy, before consideration of controls.

(i) Prior to using the uncontrolled actual VOC emission rate for compliance demonstration purposes, the owner or operator shall do both of the following:

(A) Calculate the uncontrolled actual VOC emissions on a monthly basis using a generally accepted model or calculation methodology.

(I) Monthly calculations must be based on the average throughput for the month.

(II) Monthly calculations must be separated by at least 14 days.

(B) Maintain adequate records that the uncontrolled actual VOC emissions have remained less than 4 tpy as determined monthly for 12 consecutive months.

(ii) After meeting subparagraph (i), the owner or operator shall do both of the following:

(A) Determine the uncontrolled actual VOC emission rate each month, before consideration of controls.

(B) Maintain adequate records that the actual VOC emissions have remained less than 4 tpy, before consideration of controls, on a 12-month rolling basis.

(2) Records the date of each monthly calculation performed in paragraph (1).

(c) *Fracturing or refracturing liquids*. If a well feeding the storage vessel complying with subsection (b) undergoes fracturing or refracturing, the owner or operator shall comply with subsection (h)(1) as soon as liquids from the well following fracturing or refracturing are routed to the storage vessel.

(d) *Increase in VOC emissions not associated with fracturing or refracturing*. If the monthly VOC emission rate calculation in subsection (b)(1) demonstrates that the VOC emissions from the storage vessel have increased to 4 tpy or greater and the increase is not associated with fracturing or refracturing of a well feeding the storage vessel, the owner or operator shall comply with subsection (h)(1) within 30 days of the date of the monthly calculation.

(e) *Requirements for a storage vessel removed from service.* A storage vessel subject to this section that is removed from service is not an affected source for the period that it is removed from service if the owner or operator performs all of the following:

(1) Completely empties and degasses the storage vessel so that the storage vessel no longer contains crude oil, condensate, produced water or intermediate hydrocarbon liquids. A storage vessel where liquid is left on walls, as bottom clingage or in pools due to floor irregularity is considered to be completely empty.

(2) Submits a notification in the next annual report required under subsection (l) identifying each storage vessel removed from service during the reporting period and the date of its removal from service.

(f) *Requirements for a storage vessel returned to service.* The owner or operator of a storage vessel identified in subsection (e) that is returned to service shall perform all of the following:

(1) Meet the requirements of § 127.11 (relating to reactivation of sources).

(2) Submit a notification in the next annual report required under subsection (l) identifying each storage vessel that has been returned to service during the reporting period and the date of its return to service.

(g) *Storage vessel subject to and controlled under 40 CFR part 60.* This section and §§ 129.121, 129.122 (relating to general provisions; and definitions) and 129.124—129.132 do not apply to the owner or operator of a storage vessel subject to and controlled in accordance with 40 CFR Part 60, Subpart Kb (relating to standards of performance for volatile organic liquid storage vessels, including petroleum liquid storage vessel, for which construction, reconstruction, or modification commenced after July 23, 1984) or 40 CFR Part 63, Subpart G (relating to national emission standards for organic hazardous air pollutants from the synthetic organic chemical manufacturing industry for process vents, storage vessels, transfer operations, and wastewater), Subpart CC (relating to national emission standards for hazardous air pollutants from petroleum refineries), Subpart HH (relating to national emission standards for hazardous air pollutants from oil and natural gas production facilities), or Subpart WW (relating to national emission standards for storage vessels, tanks, - control level 2).

(h) *VOC emissions control requirements*. On or before *blank* (*Editor's Note*: The blank refers to the date 1 year after the effective date of adoption of this proposed rulemaking as a final-form rulemaking.), the owner or operator shall meet the following, as applicable:

(1) *VOC emissions limitation for storage vessels*. Except for a storage vessel that complies with subsection (b), (e) or (g), the owner or operator shall reduce the VOC emissions from each storage vessel by 95.0%, by weight, or greater.

(2) *Routing to a control device or to a process or using a floating roof to reduce VOC emissions from storage vessels*.

(i) If routing to a control device or to a process to comply with paragraph (1), the owner or operator shall do all of the following:

(A) Equip the storage vessel with a cover in accordance with paragraph (3).

(B) Connect the storage vessel through a closed vent system to a control device or to a process in accordance with paragraph (4).

(C) Except as specified in clause (D), route the closed vent system to a control device that meets the conditions in paragraphs (5)—(7), as applicable.

(D) In place of clause (C), route the closed vent system to a process.

(ii) If using a floating roof to comply with paragraph (1), the owner or operator shall meet the requirements of 40 CFR 60.112b(a)(1) or (2) (relating to standards for volatile organic compounds (VOC)) and the applicable monitoring, inspection, recordkeeping and reporting requirements in 40 CFR Part 60, Subpart Kb (relating to relating to standards of performance for volatile organic liquid storage vessels (including petroleum liquid storage vessels) for which construction, reconstruction, or modification commenced after July 23, 1984).

(3) *Cover requirements for storage vessels.* The owner or operator complying with paragraph (2)(i)(A) shall do all of the following:

(i) Ensure that the cover and all openings on the cover, including access hatches, sampling ports, pressure relief valves and gauge wells form a continuous impermeable barrier over the entire surface area of the liquid in the storage vessel.

(ii) Ensure that each cover opening is secured in a closed, sealed position and covered by a gasketed lid or cap whenever material is in the storage vessel on which the cover is installed except during those times when it is necessary to use an opening for one or more of the following activities:

(A) To add material to or remove material from the storage vessel, including openings necessary to equalize or balance the internal pressure of the storage vessel following changes in the level of the material in the storage vessel.

(B) To inspect or sample the material in the storage vessel.

(C) To inspect, maintain, repair or replace equipment located inside the storage vessel.

(D) To route liquids, gases or fumes from the storage vessel through a closed vent system, designed and operated in accordance with paragraph (4), to a control device or to a process.

(iii) Ensure that each storage vessel thief hatch is equipped, maintained and operated with a weight or other mechanism to ensure that the lid remains properly seated and sealed under normal operating conditions, including when working, standing/breathing and flash emissions may be generated. Gasket material for the hatch must be based on composition of the fluid in the storage vessel and weather conditions.

(4) *Closed vent system requirements for storage vessels*. The owner or operator complying with paragraph (2)(i)(B) shall do all of the following:

(i) Design the closed vent system to route all gases, vapors and fumes emitted from the material in the storage vessel to a control device or to a process that meets paragraph (5).

(ii) Operate the closed vent system with no detectable emissions, as determined using olfactory, visual and auditory inspections.

(iii) If the closed vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors or fumes from entering the control device or routing to a process meet all of the following:

(A) Except as specified in clause (B), comply with one of the following for each bypass device:

(I) Properly install, calibrate, maintain and operate a flow indicator at the inlet to the bypass device that could divert the stream away from the control device or process to the atmosphere that sounds an alarm or initiates notification via remote alarm to the nearest field office when the bypass device is open and the stream is being, or could be, diverted away from the control device or process to the atmosphere and maintain a record in accordance with subsection (k)(9) of each time the alarm is activated.

(II) Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

(B) Low leg drains, high point bleeds, analyzer vents, open-ended valves or lines and safety devices are not subject to clause (A).

(iv) Conduct an assessment under the direction or supervision of a qualified professional engineer or in-house engineer with expertise to verify all of the following:

(A) That the closed vent system is of sufficient design and capacity to ensure that all emissions from the storage vessel are routed to the control device or to a process.

(B) That the control device is of sufficient design and capacity to accommodate all emissions from the storage vessel.

(v) Provide this written certification signed by the qualified professional engineer or the in-house engineer with expertise that directs or supervises the assessment required in subparagraph (iv): “I certify that the closed vent system design and capacity assessment was prepared under my direction or supervision. I further certify that the closed vent system design and capacity assessment was conducted and this report was prepared in accordance with 25 Pa. Code § 129.123(h)(4)(iv). Based on my professional knowledge and experience, and inquiry of personnel involved in the assessment, the certification submitted herein is true, accurate, and complete. I am aware that there are penalties for knowingly submitting false information.”

(5) *Enclosed combustion control device requirements for storage vessels*. The owner or operator using an enclosed combustion control device, including a thermal vapor incinerator, catalytic vapor incinerator, boiler or process heater, to comply with paragraph (2)(i)(C) shall meet all of the following, as applicable:

(i) Except as specified in subparagraph (ii), for each enclosed combustion control device, do all of the following:

(A) Ensure that each enclosed combustion control device is maintained in a leak free condition.

(B) Install and operate a continuous burning pilot flame.

(C) Operate the enclosed combustion control device with no visible emissions, except for periods not to exceed a total of 1 minute during any 15-minute period.

(D) Perform a visible emissions test in accordance with section 11 of EPA Method 22 one time each calendar month, separated by at least 15 days between each test. The observation period shall be 15 minutes.

(E) For an enclosed combustion control device that fails the visible emissions test in clause (D), follow manufacturer's repair instructions, if available, or best combustion engineering practice as outlined in the control device inspection and maintenance plan, to return the control device to compliant operation.

(F) Record all inspection, repair and maintenance activities for each control device in a maintenance and repair log.

(G) Make the maintenance and repair log available for inspection upon request.

(H) Following return to operation from a maintenance or repair activity, ensure that each enclosed combustion control device passes an EPA Method 22 test.

(I) Ensure that each enclosed combustion control device is designed and operated in accordance with one of the performance requirements specified in subclauses (I)—(IV):

(I) Reduces the mass content of VOC in the gases vented to the control device by 95.0%, by weight, or greater as determined in accordance with § 129.131(c) (relating to performance test and design analysis procedures).

(II) Reduces the concentration of TOC in the exhaust gases at the outlet of the control device to a level less than or equal to 275 ppm by volume as propane on a wet basis corrected to 3% oxygen as determined in accordance with § 129.131(c).

(III) Operates at a minimum temperature of 760° Celsius, if the control device has demonstrated during the performance test conducted under § 129.131(e) that combustion zone temperature is an indicator of destruction efficiency.

(IV) For a boiler or process heater, introduces the vent stream into the flame zone of the boiler or process heater.

(ii) In place of the requirements of subparagraph (i), install a control device model tested in accordance with § 129.131(d) which meets § 129.131(d)(11) and (e).

(6) *Vapor recovery control device requirements for storage vessels*. The owner or operator using a vapor recovery device, such as a carbon adsorption system or condenser, or other non-destructive control device, to comply with paragraph (2)(i)(C) shall meet all of the following, as applicable:

(i) Design and operate the control device to reduce the mass content of VOC in the gases vented to the device by 95.0%, by weight, or greater.

(ii) If complying with subparagraph (i) using a carbon adsorption system, do all of the following:

(A) Include a carbon replacement schedule in the design required in subparagraph (i).

(B) Manage the carbon in accordance with subparagraphs (iii) and (iv).

(iii) Following initial startup of the carbon adsorption system in subparagraph (ii), do all of the following:

(A) Replace all carbon in the carbon adsorption system with fresh carbon on a regular, predetermined time interval that is no longer than the carbon service life established in accordance with one of the following:

(I) The design analysis in § 129.131(d)(1)(ii).

(II) The design analysis in subparagraph (i).

(B) Maintain records identifying the schedule for replacement and records of each carbon replacement as specified in subsection (j)(10).

(iv) Regenerate, reactivate or burn the spent carbon removed from the carbon adsorption system in subparagraph (ii) in one of the following units:

(A) Regenerate or reactivate the spent carbon in a thermal treatment unit for which the owner or operator has been issued a permit or authorization by the Department's Bureau of Waste Management.

(B) Regenerate or reactivate the spent carbon in a unit equipped with operating organic air emission controls in accordance with an emissions standard for VOC under a subpart in 40 CFR Part 60 (relating to standards of performance for new stationary sources) or Part 63 (relating to national emission standards for hazardous air pollutants for source categories).

(C) Burn the spent carbon in a hazardous waste incinerator for which the owner or operator complies with the requirements of 40 CFR part 63, subpart EEE (relating to national emission standards for hazardous air pollutants from hazardous waste combustors) and has submitted a Notification of Compliance under 40 CFR 63.1207(j) (relating to performance testing requirements).

(D) Burn the spent carbon in a hazardous waste boiler or industrial furnace for which the owner or operator complies with the requirements of 40 CFR Part 63, Subpart EEE (relating to national emission standards for hazardous air pollutants from hazardous waste combustors) and has submitted a Notification of Compliance under 40 CFR 63.1207(j) (relating to performance testing requirements).

(E) Burn the spent carbon in an industrial furnace for which the owner or operator has been issued a permit or authorization by the Department's Bureau of Waste Management.

(F) Burn the spent carbon in an industrial furnace that the owner or operator has designed and operates in accordance with the interim status requirements of 40 CFR Part 266, Subpart H (relating to standards for the management of specific hazardous wastes and specific types of hazardous waste management facilities).

(7) *Flaring requirements for storage vessels*. The owner or operator using a flare to comply with paragraph (2)(i)(C) shall meet all of the following:

(i) Design and operate the flare with no visible emissions in accordance with the requirements of 40 CFR 60.18(b) (relating to general control device and work practice requirements).

(ii) Conduct the visible emissions compliance determination using EPA Method 22.

(8) *Multiple storage vessels*. The owner or operator may route the gases, vapors and fumes from more than one storage vessel to a control device installed and operated in accordance with this subsection.

(9) *Operating at all times*. The owner or operator shall operate each control device installed and operated in accordance with this subsection at all times when gases, vapors and fumes are vented from the storage vessel and routed through the closed vent system to the control device.

(i) *Initial compliance demonstration requirements*. Except as specified in paragraph (8), the owner or operator of a storage vessel subject to subsection (a) shall demonstrate initial compliance with subsection (h) by performing all of the following, as applicable:

(1) Determine the potential VOC emission rate for each storage vessel as specified in subsection (a)(2).

(2) Demonstrate in accordance with § 129.131 that the VOC emissions from each storage vessel subject to subsection (a) are reduced by 95.0%, by weight, or greater as required by subsection (h)(1).

(3) If using a control device or routing to a process to reduce VOC emissions, do all of the following:

(i) Equip the storage vessel with a cover that meets the requirements of subsection (h)(3).

(ii) Connect the cover required in subparagraph (i) to a closed vent system that meets the requirements of paragraph (h)(4).

(iii) Route the closed vent system in subparagraph (ii) to a control device or to a process that meets paragraph (h)(5), (6) or (7), as applicable.

(4) Conduct an initial performance test as required in § 129.132(d) on or before ***blank*** (*Editor's Note*: The blank refers to the date 180 days after the effective date of adoption of this proposed rulemaking as a final-form rulemaking.).

(5) Conduct the initial cover and closed vent system inspections in accordance with subsection (j)(3) on or before ***blank*** (*Editor's Note*: The blank refers to the date 180 days after the effective date of adoption of this proposed rulemaking as a final-form rulemaking.).

(6) Maintain the records as specified in subsection (k).

(7) Submit the initial annual report required in subsection (l)(1).

(8) If complying with subsection (h) by using a floating roof in accordance with subsection (h)(2)(ii), submit a statement in the annual report specified in subsection (l)(1) to the Air

Program Manager of the appropriate Regional Office that the owner or operator is complying with 40 CFR 60.112b(a)(1) or (2).

(j) *Continuous compliance demonstration*. The owner or operator of a storage vessel subject to subsection (a) shall demonstrate continuous compliance with subsection (h) by doing all of the following, as applicable:

(1) *Emission reduction requirement*. Demonstrate in accordance with § 129.131 that the VOC emissions from each storage vessel subject to subsection (a) are reduced by 95.0%, by weight, or greater.

(2) *Continuous compliance demonstration*. Except as specified in paragraph (3), for each control device used to reduce emissions in accordance with subsection (h), demonstrate continuous compliance with the applicable requirements of subsection (h)(5)(i), (6) or (7) by performing all of the following, as applicable:

(i) Conduct an inspection of each combustion control device one time each calendar month in accordance with all of the following:

(A) Conduct a visual inspection to confirm that the:

(I) Pilot is lit when vapors are being routed to the combustion control device.

(II) Continuous burning pilot flame is operating properly

(B) Conduct an inspection to monitor for visible emissions from the combustion control device using section 11 of EPA Method 22.

(I) The observation period must be 15 minutes.

(II) The combustion control device must be operated with no visible emissions, except for periods not to exceed a total of 1 minute during any 15-minute period.

(C) Conduct an olfactory, visual and auditory inspection of all equipment associated with the combustion control device to ensure system integrity.

(D) If the pilot flame is absent or if some other indication of smoking or improper equipment operation is present, including olfactory, visual or auditory indicators, ensure the equipment is returned to proper operation as soon as practicable after the event occurs by performing, at a minimum, all of the following:

(I) Check the air vent for obstruction and if an obstruction is observed, clear the obstruction as soon as practicable.

(II) Check for liquid reaching the combustor.

(E) Separate the monthly inspections by at least 14 calendar days.

(ii) Conduct an inspection of each vapor recovery control device one time each calendar month to ensure physical integrity of the control device according to the manufacturer's instructions. Separate the monthly inspections by at least 14 calendar days.

(iii) Operate each control device in accordance with the manufacturer's written operating instructions, procedures and maintenance schedule to ensure good air pollution control practices for minimizing emissions. Records of the manufacturer's written operating instructions, procedures and maintenance schedule must be available for inspection as specified by subsection (k)(12).

(iv) Conduct a periodic performance test as specified in § 129.131(c)(5)(ii) for each combustion control device in subparagraph (i), if applicable, and each vapor recovery device in subparagraph (ii), if applicable, as follows:

(A) Not later than 60 months after the initial performance test specified in § 129.131(c)(5)(i).

(B) Not later than 60 months following the previous periodic performance test.

(3) *Manufacturer's performance test*. If complying with subsection (h) in accordance with subsection (h)(5)(ii), do all of the following:

(i) Install a control device model tested in accordance with the applicable requirements of § 129.131(e)(2)—(10) that meets the criteria specified in § 129.131(e)(11).

(ii) Submit the report required by § 129.131(e)(12) to the appropriate regional office.

(iii) Document and submit CBI in accordance with § 129.131(e)(13), if applicable.

(iv) Demonstrate continuous compliance in accordance with § 129.131(f).

(4) *Inspection of closed vent system*. If routing emissions to a control device or to a process, inspect each closed vent system one time each calendar month to demonstrate compliance with subsection (h)(4)(ii) and record the results in accordance with all of the following:

(i) Conduct olfactory, visual and auditory inspections for defects that could result in air emissions, including all of the following:

(A) Visible cracks, holes or gaps in piping.

(B) Loose connections.

(C) Liquid leaks.

(D) Broken or missing caps or other closure devices.

(ii) Separate the monthly inspections by at least 14 calendar days.

(iii) Maintain records of the results of each inspection in accordance with subsection (k)(8).

(5) *Inspection of cover*. If routing emissions to a control device or to a process, inspect each cover one time each calendar month to demonstrate compliance with subsection (h)(3) and record the results in accordance with all of the following:

(i) Conduct olfactory, visual and auditory inspections for defects that could result in air emissions, including all of the following:

(A) Visible cracks, holes or gaps in the cover, or between the cover and the separator wall.

(B) Broken, cracked or otherwise damaged seals or gaskets on closure devices.

(C) Broken or missing hatches, access covers, caps or other closure devices.

(D) If the storage vessel is buried partially or entirely underground, inspect only those portions of the cover that extend to or above the ground surface and the connections on those portions of the cover, including fill ports, access hatches and gauge wells that can be opened to the atmosphere.

(ii) Separate the monthly inspections by at least 14 calendar days.

(iii) Maintain records of the results of each inspection in accordance with subsection (k)(9).

(6) *Bypass device compliance requirements*. If routing emissions to a control device or to a process, to demonstrate compliance with subsection (h)(4)(iii) for each bypass device, meet one of the following:

(i) Properly install, calibrate and maintain a flow indicator at the inlet to the bypass device that could divert the emissions stream away from the control device or process to the atmosphere.

(A) Set the flow indicator to trigger an audible alarm or initiate notification via remote alarm to the nearest field office when the bypass device is open and the emissions stream is being, or could be, diverted away from the process or control device to the atmosphere.

(B) Maintain records of each time the alarm is sounded in accordance with subsection (k)(9).

(ii) Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration and perform all of the following:

(A) Visually inspect the seal or closure mechanism one time each month to verify that the valve is maintained in the non-diverting position and the emissions stream is not being diverted away from the bypass device.

(B) Maintain a record of each inspection and a record of each time the key is checked out, if applicable, in accordance with subsection (k)(9).

(7) *Repairs*. Except as specified in paragraph (8), if a leak or defect is detected in a closed vent system or cover of a storage vessel subject to subsection (a) as specified in paragraph (4) or (5), the owner or operator shall repair the leak or defect as soon as practicable in accordance with all of the following:

(i) Make a first attempt at repair no later than 5 calendar days after the leak or defect is detected.

(ii) Complete the repair no later than 30 calendar days after the leak or defect is detected.

(iii) Apply grease or another applicable substance to deteriorating or cracked gaskets to improve the seal while awaiting repair.

(iv) Maintain a written record that lists all of the following:

(A) The location of the leak or defect.

(B) The date the leak or defect is detected.

(C) The date the leak or defect is repaired.

(8) *Delay of repair*. The owner or operator of a storage vessel subject to subsection (a) may delay the repair of a closed vent system or cover for which leaks or defects have been detected as specified in paragraph (4) or (5) if all of the following are met:

(i) The repair is technically infeasible without an unscheduled shutdown.

(ii) The emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair.

(iii) The repair of the equipment is completed by the end of the next regularly scheduled shutdown.

(iv) A written record is maintained that lists all of the following:

(A) The location of the leak or defect.

(B) The date the leak or defect is detected.

(C) The date the leak or defect is repaired.

(9) *Unsafe to inspect requirements*. The owner or operator of a storage vessel subject to subsection (a) may designate a part of the closed vent system or cover as unsafe to inspect and exempt from subsection (h)(3) and (4) if the owner or operator meets all of the following:

(i) Determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger.

(ii) Maintains onsite and complies with a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(iii) Maintains the records specified in subsection (k).

(10) *Difficult to inspect requirements*. The owner or operator of a storage vessel subject to subsection (a) may designate a part of the closed vent system or cover as difficult to inspect and exempt from subsection (h)(3) and (4), if the owner or operator meets all of the following:

(i) Determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface.

(ii) Maintains onsite and complies with a written plan that requires inspection of the equipment once every 5 years.

(11) *Recordkeeping*. The owner or operator of a storage vessel subject to subsection (a) shall maintain the records specified in subsection (k).

(12) *Annual reports*. The owner or operator of a storage vessel subject to subsection (a) shall submit the annual report required in subsection (l) for each storage vessel.

(k) *Recordkeeping requirements*. The owner or operator of a storage vessel subject to subsection (a) shall maintain onsite or at the nearest field office all of the following records, as applicable, for 5 years. The records shall be made available to the Department upon request.

(1) A copy of the initial notification required under § 129.121(b) (relating to applicability).

(2) If required to reduce emissions to comply with subsection (b)(1), the records specified in paragraphs (8)—(10) and subsections (j)(9)(ii) and (j)(10)(ii), as applicable.

(3) A record of each deviation when the storage vessel was not operated in compliance with the requirements specified in subsection (b) and § 129.131 (relating to performance test and design analysis procedures).

(4) For storage vessels that are skid-mounted or permanently attached to something that is mobile (such as trucks, railcars, barges or ships), records indicating the number of consecutive

days that the vessel is located at a site in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment. If a storage vessel is removed from a site and, within 30 days, is either returned to or replaced by another storage vessel at the site to serve the same or similar function, then the entire period since the original storage vessel was first located at the site, including the days when the storage vessel was removed, must be added to the count towards the number of consecutive days.

(5) Records of the identification and location of each storage vessel subject to emission control requirements.

(6) Except as specified in subparagraph (vii) of this section, maintain the records specified in subparagraphs (i) through (vi) of this section for each control device tested under § 129.131(e)(2)—(10) which meets the criteria in § 129.131(e)(11) and (f) and used to comply with subsection (h)(1) for each storage vessel.

(i) Make, model and serial number of purchased device.

(ii) Date of purchase.

(iii) Copy of purchase order.

(iv) Location of the control device in latitude and longitude coordinates in decimal degrees to an accuracy and precision of five (5) decimals of a degree using the North American Datum of 1983.

(v) Inlet gas flow rate.

(vi) Records of continuous compliance requirements in § 129.131(f) as specified in clauses (A) through (E).

(A) Records that the pilot flame is present at all times of operation.

(B) Records that the device was operated with no visible emissions except for periods not to exceed a total of 1 minute during any 15-minute period.

(C) Records of the maintenance and repair log.

(D) Records of the visible emissions test following return to operation from a maintenance or repair activity.

(E) Records of the manufacturer's written operating instructions, procedures and maintenance schedule to ensure good air pollution control practices for minimizing emissions.

(vii) As an alternative to the requirements of subparagraph (iv), the owner or operator may maintain records of one or more digital photographs with the date the photograph was taken and the latitude and longitude of the storage vessel and control device imbedded within or stored with the digital file. As an alternative to imbedded latitude and longitude within the digital photograph, the digital photograph may consist of a photograph of the storage vessel and control device with a photograph of a separately operating GPS device within the same digital picture, provided the latitude and longitude output of the GPS unit can be clearly read in the digital photograph.

(7) Records of each closed vent system inspection required under subsection (j)(4).

(8) A record of each cover inspection required under subsection (j)(5).

(9) If subject to the bypass requirements of subsection (j)(6), record one of the following.

(i) Each inspection.

(ii) Each time the key is checked out.

(iii) Each time the alarm is sounded.

(10) For each carbon adsorber installed on a storage vessel, records of the schedule for carbon replacement (as determined by the design analysis requirements of § 129.131(d)(1)(ii) or (iii) and records of each carbon replacement as specified in § 129.129(c)(1).

(11) For each storage vessel subject to the control device requirements of § 129.129(c) and (d), records of the inspections, including any corrective actions taken, the manufacturer’s operating instructions, procedures and maintenance schedule as specified in § 129.129(h). Records of section 11, EPA Method 22, which include:

(i) Company.

(ii) Location.

(iii) Company representative (name of the person performing the observation).

(iv) Sky conditions.

(v) Process unit (type of control device).

(vi) Clock start time.

(vii) Observation period duration (in minutes and seconds).

(viii) Accumulated emission time (in minutes and seconds).

(ix) Clock end time.

(x) The owner or operator may create a form including the above information or use Figure 22-1 in EPA Method 22. Control device manufacturer operating instructions, procedures and maintenance schedule must be available for inspection.

(12) A log of records as specified in subsection (h)(5)(i)(C)—(H) and § 129.131(e)(4) for all inspection, repair and maintenance activities for each control device failing the visible emissions test.

(l) *Reporting requirements*. The owner or operator of a storage vessel subject to subsection (a) shall submit all of the following records, as applicable:

(1) An initial notification and annual reports containing the information specified in paragraphs (2)—(7).

(2) An identification, including the location, of each storage vessel subject to VOC emission control requirements. The location of the storage vessel shall be in latitude and longitude coordinates in decimal degrees to an accuracy and precision of 5 decimals of a degree using the North American Datum of 1983.

(3) Documentation of the VOC emission rate determination according to subsection (a)(2).

(4) Records of deviations specified in subsection (k)(3) that occurred during the reporting period.

(5) A statement that the installed control device met the requirements specified in subsections (i)(2) and (3).

(6) Identify each storage vessel that is removed from service during the reporting period as specified in subsection (e), including the date the storage vessel was removed from service.

(7) Identify each storage vessel returned to service during the reporting period as specified in subsection (f), including the date the storage vessel was returned to service.

§ 129.124. Natural gas-driven pneumatic controllers.

(a) *Applicability.* This section applies to the owner or operator of each natural gas-driven pneumatic controller subject to § 129.121(a)(2) (relating to general provisions) that meets one of the following:

(1) Is located at a natural gas processing plant.

(2) Is located between the wellhead and the natural gas processing plant or point of custody transfer to an oil or natural gas pipeline.

(b) *VOC emission limit.* Except as specified in subsection (c), an owner or operator of a natural gas-driven pneumatic controller subject to subsection (a) shall comply with the VOC emission limit in paragraph (1) or paragraph (2).

(1) Beginning *blank* (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking as a final-form rulemaking.), each pneumatic controller at a natural gas processing plant must have a bleed rate of 0.0 standard cubic feet per hour.

(2) Beginning *blank* (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking as a final-form rulemaking.), each pneumatic controller located between the wellhead and a natural gas processing plant or the point of custody transfer to an oil or natural gas pipeline must have a bleed rate less than or equal to 6.0 standard cubic feet per hour.

(c) *Exceptions.* Subsection (b) does not apply to the owner or operator of a pneumatic controller subject to subsection (a) if the owner or operator complies with all of the following, as applicable:

(1) Demonstrates that the operation of a pneumatic controller at a natural gas processing plant with a bleed rate greater than 0.0 standard cubic feet per hour is required based on functional needs including one or more of the following:

(i) Response time.

(ii) Safety.

(iii) Positive actuation.

(2) Demonstrates that the operation of a pneumatic controller located between a wellhead and a natural gas processing plant or the point of custody transfer to an oil or natural gas pipeline with

a bleed rate greater than 6.0 standard cubic feet per hour is required based on functional needs including one or more of the following:

(i) Response time.

(ii) Safety.

(iii) Positive actuation.

(3) Demonstrates that the pneumatic controller is a not a natural gas-driven pneumatic controller and emits zero natural gas and VOC.

(d) *Compliance demonstration requirements for subsection (b).* The owner or operator of a pneumatic controller subject to subsection (a) shall demonstrate compliance with subsection (b) as follows:

(1) For a pneumatic controller subject to subsection (b)(1), maintain a copy of the manufacturer's design specifications that documents that the pneumatic controller emits 0.0 standard cubic feet of gas per hour.

(2) For a pneumatic controller subject to subsection (b)(2), maintain a copy of the manufacturer's design specifications that documents that the pneumatic controller emits less than or equal to 6.0 standard cubic feet of gas per hour.

(3) Tag each pneumatic controller with identification information that allows traceability to the records for that pneumatic controller required in subsection (g). The identification information shall include all of the following:

(i) The name of the manufacturer.

(ii) The serial number.

(iii) The location.

(e) *Compliance demonstration requirements for subsection (c).* The owner or operator of a pneumatic controller subject to subsection (a) shall demonstrate compliance with subsection (c) as follows:

(1) For a pneumatic controller subject to subsection (c)(1), maintain documentation that the operation of the pneumatic controller at a bleed rate greater than 0.0 standard cubic feet of gas per hour is required based on functional needs and the reasons why.

(2) For a pneumatic controller subject to subsection (c)(2), maintain documentation that the operation of the pneumatic controller at a bleed rate greater than 6.0 standard cubic feet of gas per hour is required based on functional needs and the reasons why.

(3) For a pneumatic controller complying with subsection (c)(3), maintain documentation that the pneumatic controller is a not a natural gas-driven pneumatic controller and emits zero natural gas and VOC.

(4) Tag each pneumatic controller with identification information that allows traceability to the records for that pneumatic controller required in subsection (g). The identification information shall include all of the following:

(i) The name of the manufacturer.

(ii) The serial number.

(iii) The location.

(f) *Recordkeeping requirements.*

(1) The owner or operator of a pneumatic controller subject to subsection (a) shall maintain all of the following records, as applicable:

(i) For each pneumatic controller, a copy of the information required in subsection (d)(3) or subsection (e)(4), as applicable.

(ii) For a pneumatic controller subject to subsection (b)(1), a copy of the information required in subsection (d)(1).

(iii) For a pneumatic controller subject to subsection (c)(1), a copy of the information required in subsection (e)(1).

(iv) For a pneumatic controller subject to subsection (b)(2), a copy of the information required in subsection (d)(2).

(v) For a pneumatic controller subject to subsection (c)(2), a copy of the documentation required in subsection (e)(2).

(vi) For a pneumatic controller subject to subsection (c)(3), a copy of the documentation required in subsection (e)(3).

(2) A copy of the initial report submitted to the Department in accordance with subsection (g)(1).

(3) A copy of the annual report submitted to the Department in accordance with subsection (g)(2).

(4) The records in paragraphs (1)—(3) shall be maintained onsite or at the owner or operator's nearest local field office for 5 years, unless a longer period is required under Chapter 127

(relating to construction, modification, reactivation and operation of sources) or a plan approval, operating permit, consent decree or order issued by the Department.

(6) The records shall be made available to the Department upon receipt of a written request from the Department.

(g) *Reporting requirements*.

(1) The owner or operator of a pneumatic controller subject to subsection (a) shall submit an initial report by ***blank*** (*Editor's Note*: The blank refers to the date that is 30 days after the effective date of adoption of this proposed rulemaking as a final-form rulemaking.) to the Department. The initial report shall include all of the following information:

(i) A list of each pneumatic controller, including the identification information specified in subsection (d)(3) or subsection (e)(4).

(ii) If applicable, documentation that the use of a pneumatic controller with a natural gas bleed rate greater than the applicable standard is required and the reasons why.

(iii) If applicable, documentation that a pneumatic controller has been removed from service and the reasons why.

(2) The owner or operator of a pneumatic controller subject to subsection (a) shall submit an annual report by March 1 of the year following the calendar year of operation to the Department. The annual report shall include all of the following information:

(i) A list of each pneumatic controller subject to subsection (a), including the identification information specified in subsection (d)(3) or subsection (e)(4).

(ii) If applicable, documentation that the use of a pneumatic controller with a natural gas bleed rate greater than the applicable standard is required and the reasons why.

§ 129.125. Natural gas-driven diaphragm pumps.

(a) *Applicability.* The VOC emission control requirement specified in this section apply to the owner or operator of each natural gas-driven diaphragm pump subject to § 129.121(a) (relating to general provisions) that meets one of the following:

(1) Is located at a natural gas processing plant.

(2) is located at a well site.

(b) *VOC emission limits.* Except as specified in subsection (c), an owner or operator of a pneumatic pump subject to subsection (a) shall comply with paragraph (1) or paragraph (2).

(1) Beginning *blank* (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking as a final-form rulemaking.), each pneumatic pump at a natural gas processing plant must have a VOC emission bleed rate of zero.

(2) Beginning *blank* (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking as a final-form rulemaking.), each pneumatic pump at a well site must comply with the following:

(i) Capture and route natural gas emissions to a control device with at least 95.0% VOC destruction efficiency.

(ii) If emissions are routed to a control device or process to reduce emissions, the owner or operator shall connect the pneumatic pump subject to VOC emission control requirements through a closed vent system that meets the requirements of section § 129.128(b).

(c) *Exceptions*. Beginning *blank* (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking as a final-form rulemaking.), a pneumatic pump at a well site:

(1) That is in operation less than 90 days per calendar year is not a source subject to VOC requirements under this rule.

(i) Provided that the owner/operator keeps records of the days of operation each calendar year.

(ii) For the purposes of this rule, any period of operation during a calendar day counts toward the 90-calendar day threshold.

(2) If the control device available on site is unable to achieve a 95.0 % reduction and there is no ability to route the emissions to a process, the owner or operator shall route the pneumatic pump’s emissions to that existing control device.

(3) If there is no control device or process available on site, the owner or operator is not required to install one to comply with subsection (b)(1), however, the following conditions must be met:

(i) In the next annual report required in subsection (f), certify that there are no available control devices or processes on site.

(ii) Maintain the records required in subsection (e).

(iii) If a control device or process is subsequently installed, the certification in subparagraph (i) is no longer required to be submitted and the owner or operator shall comply with the requirements of subsection (b) within 30 days of startup of the control device or ability to route to a process.

(4) If an engineering assessment performed in accordance with this paragraph determines that routing a pneumatic pump to a control device or a process is technically infeasible to meet the requirements of subsection (b), the requirements specified in subparagraphs (i) through (iii) must be met.

(i) The assessment of technical infeasibility must be prepared under the direction or supervision of an in-house engineer or professional engineer.

(ii) The assessment of technical feasibility to route emissions from the pneumatic pump to an existing control device on site or to a process must include:

(A) Safety considerations.

(B) Distance from the control device.

(C) Pressure losses and differentials in the closed vent system.

(D) Ability of the control device to handle the pneumatic pump emissions which are routed to them.

(iii) The assessment of technical infeasibility must be certified, signed, and dated by an in-house engineer or professional engineer and shall state: "I certify that the assessment of technical infeasibility was prepared under my direction or supervision. I further certify that the assessment was conducted and this report was prepared pursuant to the requirements of § 129.125(c)(4). Based on my professional knowledge and experience, and inquiry of personnel involved in the assessment, the certification submitted herein is true, accurate, and complete. I am aware that there are penalties for knowingly submitting false information."

(5) If a control device or a process to which the VOC emissions from a pneumatic pump is routed is subsequently removed from the location or is no longer available, the owner or operator is no longer required to meet the requirements of subsection (b), and instead must comply with paragraph (c)(3) and report the change in the next annual report.

(d) *Initial compliance demonstration requirements*. The owner or operator shall demonstrate initial compliance by the compliance date by meeting the following requirements:

(1) For a pneumatic pump located at a natural gas processing plant, maintain documentation the pneumatic pump is driven by a gas other than natural gas, resulting in zero VOC emissions.

(2) For a pneumatic pump located at a well site:

(i) Maintain documentation that the emissions from the pump are reduced by 95%.

(ii) If there is no control device or process available on site, the owner or operator must maintain the documentation meeting the requirements of subsection (c)(3).

(3) If required to collect emissions from a natural gas-driven pneumatic pump through a closed vent system, maintain documentation of the initial closed vent system inspection required in § 129.129(b).

(4) Include a listing of the pneumatic pumps subject to VOC emission requirements specified in paragraphs (1) through (3) in the first annual report according to the requirements of subsection (f).

(5) Maintain the records specified in subsection (e) for each pneumatic pump subject to subsection (b).

(d) *Continuous compliance demonstration requirements*. For each pneumatic pump demonstrate continuous compliance according to paragraphs (1) and (2).

(1) If required to collect emissions from a pneumatic pump through a closed vent system, conduct the periodic closed vent system inspections required in § 129.128(b).

(2) Submit the annual reports required in subsection (f) and maintain the records in subsection (e).

(e) *Recordkeeping*. For each pneumatic pump subject to VOC emission control requirements, maintain the records identified in subparagraphs (i) through (v), as applicable, onsite or at the nearest local field office for at least five years.

(1) Records of the date that an individual pneumatic pump is required to comply with the rule.

(i) Site location (Latitude and longitude).

(ii) Manufacturer specifications for each pneumatic pump.

(iii) Records of deviations in cases where the natural gas-driven pneumatic pump was not operated in compliance with the requirements specified in subsection (b).

(iv) Records on the control device used for control of emissions from a pneumatic pump including:

(A) The installation date.

(B) Manufacturer's specifications.

(C) If the control device is designed to achieve less than a 95.0 % emission reduction, a design evaluation or manufacturer’s specifications indicating the percentage reduction the control device is designed to achieve.

(v) Records demonstrating that it is technically infeasible to capture and route emissions from a pneumatic pump to a control device or process including:

(A) Records substantiating a claim according to subsection (c)(4).

(B) The certification by the in-house engineer or professional engineer certification according to subsection (c)(4)(iii).

(2) If required to collect emissions from a pneumatic pump through a closed vent system, the owner or operator must maintain the records identified in subparagraphs (i) through (iv).

(i) Records of each closed vent system inspection required under § 129.128(b)(2).

(ii) If subject to the bypass requirements of § 129.128(b)(3) a record of one of the following:

(A) Each inspection.

(B) Each time the key is checked out.

(C) Each time the alarm is sounded.

(iii) Records of the monitoring conducted for closed vent system no detectable emissions requirements of § 129.128(d) if required.

(iv) For each closed vent system routing to a control device or process, keep the following:

(A) A copy of the assessment conducted according to § 129.128(c);

(B) A copy of the certification according to § 129.128(c)(2).

(f) *Reporting requirements*. For each pneumatic pump subject to VOC emission control requirements, submitted reports are required to include the information:

(1) All reports must include § 129.121(b)

(i) Natural gas processing plants demonstrate zero natural gas emissions.

(ii) Inventory.

(A) Total number of pumps.

(B) Number of pumps subject to § 129.125.

(2) The initial report:

(i) Serial number of subject pneumatic pump.

(ii) Certification that the pneumatic pump meets one of the conditions described in clause (A), through (D).

(A) The pump is routed to a control device or process with a VOC emissions destruction efficiency equal to or greater than 95%.

(B) If the control device is unable to achieve 95.0 % emissions reduction, specify the percent emissions reductions of the control device.

(C) No control device or process is available on site.

(D) A control device or process is available on site and that it is technically infeasible to capture and route the emissions to the control device or process.

(iii) Submit the report within 60 day of the date specified by the Department

(3) For any pneumatic pump which has been previously reported as required under paragraph (2), the annual report must:

(i) Describe a change in the reported condition has occurred during the reporting period.

(ii) Serial number of affected pneumatic pump.

(iii) Date it was previously reported.

(iv) Certification that the pneumatic pump meets one of the conditions described in paragraphs (2)(ii).

(v) A control device has been added to the location and the pneumatic pump now reports according to paragraph (2)(ii)(A).

(vi) A control device has been added to the location and the pneumatic pump now reports according to paragraph (2)(ii)(B).

(vii) A control device or process has been removed from the location or otherwise is no longer available and the pneumatic pump now report according to paragraph (2)(ii)(C).

(viii) A control device or process has been removed from the location or is otherwise no longer available and the owner or operator has determined in accordance with subsection (c)(4) through an engineering evaluation that it is technically infeasible to capture and route the emissions to another control device or process.

(4) Records of deviations specified in subsection (e)(1)(iii) that occurred during the reporting period.

(5) If required to collect emissions from a natural gas-driven pneumatic pump through a closed vent system, the records specified in subsection (e)(2).

§ 129.126. Centrifugal compressors and reciprocating compressors.

(a) *Applicability*. Except as specified in paragraph (3), this section applies to the owner or operator of each centrifugal compressor or reciprocating compressor subject to § 129.121(a) (relating to general provisions), as follows:

(1) *Centrifugal compressor*. Each centrifugal compressor using wet seals that is located between the wellhead and point of custody transfer to the natural gas transmission and storage segment.

(2) *Reciprocating compressor*. Each reciprocating compressor located between the wellhead and point of custody transfer to the natural gas transmission and storage segment.

(3) *Exception*. A centrifugal compressor or a reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not a source subject to this section, §§ 129.121—129.125 and 129.127—129.131.

(4) *Recordkeeping*. The owner or operator shall maintain the records required by subsection (h).

(5) *Reporting*. The owner or operator shall submit the annual report required by subsection (i) by March 1 of the year following the calendar year of operation.

(b) *VOC emission control requirements for a centrifugal compressor*. An owner or operator of a centrifugal compressor subject to subsection (a) shall do the following, as applicable:

(1) Reduce the VOC emissions from each centrifugal compressor wet seal fluid degassing system by 95.0% in accordance with paragraph (2).

(2) If routing to a control device or to a process to comply with paragraph (1), the owner or operator shall do all of the following:

(i) Equip the wet seal fluid degassing system with a cover that meets the requirements of § 129.128(a)(1) (relating to cover requirements for centrifugal compressors).

(ii) Connect the cover to the control device through a closed vent system that meets § 129.128(b).

(iii) Route the closed vent system to a control device or process that meets the requirements of § 129.129 (relating to control device requirements) and operates when gases, vapors and fumes are routed from the wet seal fluid degassing system through the closed vent system to a control device or process.

(3) Except as specified in § 129.130(b) (relating to continuous control device monitoring requirements), install and operate a continuous parameter monitoring system as specified in § 129.130 for each control device installed in accordance with paragraph (2).

(4) *Recordkeeping*. The owner or operator shall maintain the records required by subsection (h).

(5) *Reporting*. The owner or operator shall submit the annual report required by subsection (i) by March 1 of the year following the calendar year of operation.

(c) *VOC emission control requirements for a reciprocating compressor*. An owner or operator of a reciprocating compressor subject to subsection (a) shall do one of the following:

(1) Replace the reciprocating compressor rod packing in accordance with subparagraph (i) or (ii), as follows:

(i) On or before the reciprocating compressor has operated for 26,000 hours. The number of hours of operation must be continuously monitored beginning at 12 am on the later of:

(A) <u>*Blank*</u> (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking when published as a final-form rulemaking.).

(B) The date of the most recent reciprocating compressor rod packing replacement.

(ii) Prior to the date 36 months after the date of the most recent reciprocating compressor rod packing replacement or if the rod packing has not yet been replaced, prior to <u>*Blank*</u> (*Editor's Note*: The blank refers to the date 36 months after the effective date of adoption of this proposed rulemaking when published as a final-form rulemaking.).

(2) Route the VOC emissions to a process by using a reciprocating compressor rod packing emissions collection system that operates under negative pressure and meets the cover requirements of § 129.128(a)(2) and the closed vent system requirements of § 129.128(b).

(3) *Recordkeeping*. The owner or operator shall maintain the records required by subsection (h).

(4) *Reporting*. The owner or operator shall submit the annual report required by subsection (i) by March 1 of the year following the calendar year of operation.

(d) *Compliance demonstration requirements for a centrifugal compressor using a control device to reduce VOC emissions*. Except as specified in subsection (e), an owner or operator of a centrifugal compressor subject to subsection (a) using a control device to reduce the VOC emissions shall demonstrate compliance with subsection (b) in accordance with the following:

(1) *Initial compliance demonstration*. The owner or operator shall demonstrate initial compliance with subsection (b)(2) by doing the following:

(i) Demonstrate VOC emissions reductions of equal to or greater than 95.0% from each centrifugal compressor wet seal fluid degassing system in accordance with § 129.131(c) (relating to performance and test requirements).

(ii) Demonstrate the wet seal fluid degassing system is equipped with a cover in accordance with § 129.128(a)(1).

(ii) Demonstrate the cover is connected to a control device through a closed vent system in accordance with § 129.128(b).

(iii) Demonstrate the closed vent system is routed to a control device or process in accordance with § 129.129 (relating to control device requirements for centrifugal compressors, reciprocating compressors, and natural gas-driven diaphragm pumps.).

(iv) Conduct an initial performance test in accordance with § 129.131(c)(6)(i) on or before *blank* (*Editor's Note*: The blank refers to the date 180 days after the effective date of adoption of this proposed rulemaking when published as a final-form rulemaking.).

(iv) Conduct the initial inspection of the cover and closed vent system in accordance with § 129.128(a)(1) and (b) on or before *blank* (*Editor's Note*: The blank refers to the date 180 days after the effective date of adoption of this proposed rulemaking when published as a final-form rulemaking.).

(v) Demonstrate installation and operation of the continuous parameter monitoring system in accordance with § 129.130.

(2) *Continuous compliance demonstration.* The owner or operator shall demonstrate continuous compliance with subsection (b)(3) by doing the following, as applicable:

(i) Demonstrate VOC emissions reductions of equal to or greater than 95.0% from each centrifugal compressor wet seal fluid degassing system in accordance with § 129.131(c).

(ii) The owner or operator may switch between compliance with subparagraphs (iii)(A)—(G) and compliance with subparagraph (iii)(H) provided the following conditions are met:

(A) The method of compliance is switched after at least one year of operation using the current approach.

(B) Notification of the change in the method of compliance is provided in the next annual report.

(iii) Except as specified in clause (H), use the procedures in clauses (A)—(G) to demonstrate continuous compliance with subsection (b) as follows:

(A) Operate the control device with a daily average of the applicable continuous monitoring operating parameter in accordance with one of the following:

(I) Less than or equal to the site-specific maximum continuous monitoring operating parameter limit established in accordance with § 129.130(f)(1).

(II) Equal to or greater than the site-specific minimum continuous monitoring operating parameter limit established in accordance with § 129.130(f)(1).

(B) Calculate the daily average of the applicable continuous monitoring operating parameter in clause (A) in accordance with § 129.130(e), except that the inlet gas flow rate to the control device must not be averaged.

(C) Compliance of the daily average continuous monitoring operating parameter value calculated in clause (B) with the applicable continuous monitoring operating parameter limit in clause (A) is demonstrated as follows:

(I) When the calculated daily average continuous monitoring operating parameter value is less than or equal to the maximum continuous monitoring operating parameter limit established in clause (A)(I).

(II) When the calculated daily average continuous monitoring operating parameter value is equal to or greater than the minimum continuous monitoring operating parameter limit established in clause (A)(II).

(D) Except as specified in subclauses (I)—(III), operate the continuous parameter monitoring system required in subsection (b)(3) when the control device is operating in accordance with subsection (b)(2)(iii).

(I) During periods of monitoring system malfunctions.

(II) During repairs associated with monitoring system malfunctions.

(III) During required monitoring system quality assurance or quality control activities including, as applicable, system accuracy audits and required zero and span adjustments.

(E) Repair the continuous parameter monitoring system in response to a monitoring system malfunction identified in clause (D)(I) and return the monitoring system to operation as soon as possible.

(3) *Deviations*. Except as specified in paragraph (2)(ii)(D)(I)—(III), failure of the owner or operator to collect required data is a deviation of the monitoring requirements.

(4) *Recorded data*. The owner or operator shall use the recorded data as follows:

(i) Except as specified in subparagraph (ii), the continuous parameter monitoring system data collected during required data collection periods shall be used to assess the operation of the control device and associated control system.

(ii) Continuous parameter monitoring system data recorded during a period specified in paragraph (2)(ii)(D)(I)—(III) may not be used to calculate the daily average of the applicable continuous monitoring operating parameter required in paragraph (2)(ii)(B) to demonstrate compliance in accordance with paragraph (2)(ii)(C) or to report emissions.

(5) *Recordkeeping*. The owner or operator shall maintain the records required by subsection (h).

(6) *Reporting*. The owner or operator shall submit the annual report required by subsection (i) by March 1 of the year following the calendar year of operation.

(e) *Compliance demonstration requirements for a centrifugal compressor using a combustion control device to reduce VOC emissions*. An owner or operator of a centrifugal compressor subject to subsection (a) using a combustion control device to reduce the VOC emissions shall demonstrate compliance with subsection (b) in accordance with the following:

(1) If using a combustion control device to achieve 95% VOC emissions control, and if demonstrating compliance using the test procedures specified in §129.131(c), or if using a flare, comply with paragraphs (1)(i)—(iv).

(i) A pilot flame must be present when in operation.

(ii) Devices must be operated with no visible emissions, except for periods not to exceed a total of one minute during any 15-minute period. A visible emissions test using section 11 of EPA Method 22, must be performed at least once every calendar month, separated by at least 15 days between each test. The observation period shall be 15 minutes.

(iii) Devices failing the visible emissions test must follow manufacturer's repair instructions, or if these are unavailable, follow the best combustion engineering practice as outlined in the unit inspection and maintenance plan to return the unit to compliant operation. All inspection, repair and maintenance activities for each unit must be recorded in a maintenance and repair log and must be available for inspection.

(iv) Following a return to operation from a maintenance or repair activity, each device must pass a Method 22, 40 CFR part 60, appendix A-7, visual observation as described in paragraph (1)(ii).

(4) *Recordkeeping*. The owner or operator shall maintain the records required by subsection (h).

(5) *Reporting*. The owner or operator shall submit the annual report required by subsection (i) by March 1 of the year following the calendar year of operation.

(f) *Compliance demonstration requirements for a centrifugal compressor using a condenser as the control device to reduce VOC emissions.* An owner or operator of a centrifugal compressor subject to subsection (a) using a condenser as the control device to reduce the VOC emissions shall demonstrate compliance with subsection (b) in accordance with the following:

(1) If using a condenser to achieve 95% VOC emission reduction, demonstrate compliance using the procedures in paragraph (1)(i)—(v).

(i) Establish a site-specific condenser performance curve according to § 129.130(f)(2).

(ii) Calculate the daily average condenser outlet temperature in accordance with § 129.130(e).

(iii) Determine the condenser efficiency for the current operating day using the daily average condenser outlet temperature calculated under paragraph (1)(ii) and the condenser performance curve established under paragraph (1)(i).

(iv) Calculate the 365-day rolling average VOC emission reduction using the methodology in paragraph (1)(iii). Compliance is achieved if 365 days of data are available and a 95% or greater VOC emissions reduction is calculated. If less than 365 days of data are available, do the following:

(A) If less than 120 days of data are available for determining average VOC emission reduction, Calculate the average VOC emission reduction for the first 120 days of operation. Compliance with the overall 95.0 % emissions reduction requirement is demonstrated if the 120-day average VOC emission reduction is 95.0 % or greater.

(B) After 120 days and no more than 364 days of operation, Calculate the average TOC emission reduction as the VOC emission reduction averaged over the number of days of operation where data is available. Compliance with the 95.0 % reduction requirement is demonstrated if the average VOC emission reduction is 95.0 % or greater.

(iii) Submit the annual reports required by subsection (i)(2)(i)

(iv) Maintain the records as specified in subsection (h)(1)(i).

(v) If compliance with this rule is achieved by equipping the wet seal fluid degassing system and routing emissions to a control device or process, comply with the cover and closed vent requirements in §129.129 (a)(1) and (2).

(4) *Recordkeeping*. The owner or operator shall maintain the records required by subsection (h).

(5) *Reporting*. The owner or operator shall submit the annual report required by subsection (i) by March 1 of the year following the calendar year of operation.

(g) *Compliance demonstration requirements for a reciprocating compressor*. An owner or operator of a reciprocating compressor subject to subsection (a) shall demonstrate compliance with subsection (c) by doing the following, as applicable:

(1) *Initial compliance demonstration*. To achieve initial compliance with subsection (c)(1) demonstrate 1 of the following:

(i) The hours of operation are continuously monitored

(ii) The number of months since the last rod packing replacement

(iii) Demonstrate the installation and operations with negative pressure of the rod packing emissions collection system by the applicable compliance date.

(2) *Continuous compliance demonstration*. For each reciprocating compressor subject to VOC emission reduction requirements, the owner or operator must demonstrate continuous compliance according to paragraphs (2)(i) through (iv).

(i) Continuously monitor the number of hours of operation for each reciprocating compressor since the last rod packing replacement.

(ii) Track the number of months or the date of the most recent reciprocating compressor rod packing replacement.

(iii) Submit the annual reports as required in subsection (i).

(iv) Maintain records as required in subsection (h).

(iii) Replace the reciprocating compressor rod packing on or before the total number of hours of operation reaches 26,000 hours or the number of months since the most recent rod packing replacement reaches 36 months.

(iv) If VOC emissions from the rod packing are collected and routed using a rod packing emissions collection system which operates under negative pressure as required by subsection (c)(2), the rod packing emissions collection system must be operated under negative pressure and continuously comply with the closed vent system requirements in §129.128(b).

(4) *Recordkeeping*. The owner or operator shall maintain the records required by subsection (h).

(5) *Reporting*. The owner or operator shall submit the annual report required by subsection (i) by March 1 of the year following the calendar year of operation.

(h) *Recordkeeping requirements*.

(1) *Centrifugal compressors*. For each applicable centrifugal compressor, maintain the records specified in subparagraphs (i) through (x) and retain copies onsite or at the nearest local field office for at least five years.

(i) An identification of each existing centrifugal compressor using a wet seal system.

(ii) Documentation of deviations where the centrifugal compressor was not operated in compliance with requirements specified in subsection (b).

(iii) Except as specified in clause (G), for each control device tested under § 129.131(e) which meets the criteria in §§ 129.131(e)(11) and (f) to comply with subsection (b), maintain the following records:

(A) Make, model and serial number of purchased device.

(B) Date of purchase.

(C) Copy of purchase order.

(D) Location of the centrifugal compressor and control device in latitude and longitude coordinates in decimal degrees to an accuracy and precision of five (5) decimals of a degree using the North American Datum of 1983.

(E) Inlet gas flow rate.

(F) Records of continuous compliance requirements in §129.131(f) as follows:

(I) Records that the pilot flame is present during periods of operation.

(II) Records that the device was operated with no visible emissions except for periods not to exceed a total of 1 minute during any 15-minute period.

(III) Records of the maintenance and repair log.

(IV) Records of the visible emissions test following return to operation from a maintenance or repair activity.

(V) Records of the manufacturer's written operating instructions, procedures and maintenance schedule to ensure good air pollution control practices for minimizing emissions.

(G) As an alternative to the requirements of clauses (A)—(F), maintain records of digital photographs of each centrifugal compressor. The photo must include the date the photograph was taken and the latitude and longitude of the centrifugal compressor imbedded within or stored with the digital file. As an alternative, the digital photograph may include a separately operating GPS device within the digital picture which confirms latitude and longitude. The latitude and longitude output of the GPS unit must be clearly readable in the digital photograph.

(iii) Records of each closed vent system inspection required under §129.128(b).

(iv) A record of each cover inspection required under §129.128(a)(1).

(v) If subject to the bypass requirements of §129.128(b)(3), one of the following:

(A) A record of each inspection

(B) A record each time the key is checked out

(C) A record of each time the alarm is sounded.

(vi) If subject to the requirements of §129.128(b)(2)(i)(B) or (ii)(A), a record of the monitoring in accordance with §129.128(d).

(vii) Records of the schedule for carbon replacement as determined by the design analysis requirements of §129.131(d)(1)(ii) or (iii) and records of each carbon replacement as specified in §129.129(c)(1).

(viii) If subject to the control device requirements of § 129.129 (relating to control device requirements), records of the following:

(A) Minimum and maximum operating parameter values.

(B) Continuous parameter monitoring system data.

(C) Calculated averages of continuous parameter monitoring system data.

(D) Results of all compliance calculations.

(E) Results of all inspections.

(ix) A log of records for all inspection, repair and maintenance activities for each control device failing the visible emissions test in subsection (d)(2)(ii)(G)(III).

(x) Record the following information for a monitoring system malfunction identified in subsection (d)(2)(ii)(D)(I) and (II) and repaired in accordance with clause (d)(2)(ii)(E):

(A) Date the monitoring system malfunction occurs.

(B) Reason for the monitoring system malfunction.

(C) How the monitoring system malfunction is repaired.

(D) Date the continuous parameter monitoring system is returned to operation.

(2) *Reciprocating compressors*. For each reciprocating compressor maintain the records in paragraphs (2)(i)—(iv). These records must be maintained onsite or at the nearest local field office for at least five years.

(i) Records of one of the following:

(A) The cumulative number of hours of operation.

(B) The number of months since the previous replacement of the rod packing.

(C) A statement that emissions from the rod packing are being routed to a process through a closed vent system under negative pressure.

(ii) Records of either:

(A) The date and time of each rod packing replacement.

(B) The date of installation of a rod packing emissions collection system and closed vent system.

(iii) Records of any deviations from the operational requirements in subsection (c).

(iv) If the owner or operator complies by routing emissions from the rod packing to a process through a closed vent system. maintain the records in clauses (A)—(D).

(A) Records of each closed vent system inspection required under § 129.128(b).

(B) If subject to the bypass requirements of § 129.128(b)(3), a record of:

(I) Each inspection

(II) Each time the key is checked out

(III) Each time the alarm is sounded.

(C) If subject to the closed vent system requirements of §129.128(b)(2)(i)(B) or (ii)(A), a record of the monitoring in accordance with §129.128(d).

(D) A record of each cover inspection required under §129.128(a)(2).

(i) Reporting requirements.

(1) *Centrifugal compressors*. For each centrifugal compressor, submit annual reports containing the following information:

(i) An identification of each existing centrifugal compressor using a wet seal system.

(ii) Records of deviations specified in subsection (f)(1)(ii) that occurred during the reporting period.

(iii) The records specified in subsection (f)(1)(iii) through (viii).

(iv) If achieving 95% control with a control device tested under §129.131(e) which meets the criteria in §129.131(e)(11) and (f), in the initial annual report, submit the records specified in subsection (f)(1)(iii) for each centrifugal compressor using a wet seal system that is subject to this rule. In subsequent annual reports, records specified in subsection (f)(1)(iii)(F) along with information sufficient to link to the identifying information provided in the initial report.

(2) *Reciprocating compressors*. Submit an annual report containing the following information:

(i) The latest of the following:

(A) The cumulative number of hours of operation.

(B)The number of months since the compliance date.

(C) The previous reciprocating compressor rod packing replacement.

(ii) As an alternative to subparagraph (i) a statement that emissions from the rod packing are being routed to a process through a closed vent system.

(iii) Records of deviations specified in subsection (f)(2)(iii), that occurred during the reporting period.

(iv) If required to comply with subsection (c)(2), the records specified in subsection (f)(2)(i)—(iv).

§ 129.127. Fugitive emissions components.

(a) *Applicability.* The collection of fugitive emission components, as defined in section § 129.122 (relating to definitions), located at:

(1) A well site with wells that produce, on average, greater than 15-barrel equivalents per day.

(2) A natural gas gathering and boosting station.

(3) A natural gas processing plant.

(b) *Compliance requirements at well sites.* The owner or operator of a well site shall determine the GOR of the well using generally accepted methods.

(1) If the GOR is less than 300 scf of gas per barrel of oil produced the owner or operator shall comply by maintaining records in accordance with § 129.127(j)(3).

(2) If the GOR is greater than or equal to 300 scf of gas per barrel of oil produced, the owner or operator shall:

(i) Conduct an AVO inspection within 30 days of compliance date, and at least monthly thereafter.

(ii) Conduct an LDAR program within 60 days of compliance date, and at least quarterly thereafter, using either:

(A) OGI equipment.

(B) A gas leak detector that meets the requirements of EPA Method 21.

(C) Another leak detection methods approved by the Division of Source Testing and Monitoring.

(iii) The owner or operator of a well site may track the percentage of leaking components and meet the following:

(A) If the percentage of leaking components is less than 2% for two consecutive inspections, reduce the LDAR frequency to semi-annually.

(B) If at any time the percentage of leaking components is greater than or equal to 2%, resume the quarterly LDAR frequency.

(iv) Maintain records in accordance with subsection (j) and report in accordance with subsection (k).

(3) A well site that is temporarily shut-in is not required to perform LDAR until 60 days after the well is put into production or the next semi-annual inspection.

(4) The owner or operator of any affected facility may request, in writing, an extension of the LDAR inspection interval from the Air Program Manager of the appropriate DEP Regional Office.

(c) *Compliance requirements at natural gas gathering and boosting stations and processing plants.* The owner or operator of a natural gas gathering and boosting station or processing plant shall:

(1) Conduct an AVO inspection within 30 days of compliance date, and at least monthly thereafter.

(2) Conduct a LDAR program within 60 days of compliance date, and at least quarterly thereafter using either:

(i) OGI equipment.

(ii) A gas leak detector that meets the requirements of EPA Method 21.

(iii) Another leak detection method approved by the Division of Source Testing and Monitoring.

(3) Maintain records in accordance with subsection (j) and report in accordance with subsection (k).

(4) The owner or operator of any affected facility may request, in writing, an extension of the LDAR inspection interval from the Air Program Manager of the appropriate DEP Regional Office.

(d) *Fugitive emissions monitoring plan.* The owner or operator shall develop an emissions monitoring plan that covers the collection of fugitive emission components at the applicable facility within each company-defined area that includes all of the following elements:

(1) The technique used for determining fugitive emissions.

(2) A list of fugitive emissions detection equipment, including the manufacturer and model number, that may be used at the facility.

(3) A list of personnel that may conduct the monitoring surveys at the facility, including their training and experience.

(4) The procedures and timeframes for identifying and fixing fugitive emission components from which fugitive emissions are detected, including for those components that are unsafe-to-repair.

(5) The procedures and timeframes for verifying fugitive emission component repairs.

(6) The procedures and schedule for verifying the detection equipment is operating properly, including:

(i) For OGI equipment, all of the following requirements:

(A) The equipment must be capable of imaging a gas either:

(I) In the spectral range for the compound of highest concentration in the potential fugitive emissions. or

(II) That is half methane, half propane at a concentration of 10,000 ppm at a flow rate of ≤60 grams/hour from a quarter inch diameter orifice.

(B) A procedure for a daily verification check.

(C) A procedure for determining the operator's maximum viewing distance from the equipment and how the operator will ensure that this distance is maintained.

(D) A procedure for determining maximum wind speed during which monitoring can be performed and how the operator will ensure monitoring occurs only at wind speeds below this threshold.

(E) A procedure for conducting surveys including:

(I) How the operator will ensure an adequate thermal background is present to view potential fugitive emissions.

(II) How the operator will deal with adverse monitoring conditions, such as wind.

(III) How the operator will deal with interferences, such as steam.

(F) A procedure for calibration and maintenance that must comply with the manufacturer's recommendation.

(ii) For gas leak detection equipment using EPA Method 21, all of the following requirements:

(A) Verification that the monitoring equipment either:

(I) Meets the requirements of Section 6.0 of EPA Method 21 with a fugitive emissions definition of 500 ppm or greater calibrated as methane using a FID-based instrument.

(II) A site-specific fugitive emission definition that would be equivalent to clause (A)(I) for other equipment permitted in EPA Method 21;

(B) Perform the instrument response factor of Section 8.1.1 of EPA Method 21 using the average composition of the fluid, not for each individual organic compound in the stream.

(C) Calculate the average stream response factor on an inert-free basis for process streams that contain nitrogen, air, or other inert gases that are not organic HAPs or VOCs.

(D) Calibrate the detection instrument in accordance with Section 10.1 of EPA Method 21 on each day of its use using zero air and a mixture of methane in air at a concentration less than 10,000 ppmv as the calibration gases.

(F) A procedure for conducting surveys, which must comply with the relevant sections of EPA Method 21, including Section 8.3.1.

(iii) For Department approved methods, a copy of the request for approval that shows the equivalence to subparagraph (i) or (ii).

(7) A sitemap.

(8) If using OGI, a defined observation path that ensures that all fugitive emissions components are within sight of the path and that accounts for interferences.

(9) If using EPA Method 21, a list of all fugitive emissions components to be monitored and an identification method to locate them in the field.

(10) A written plan for all fugitive emission components designated as difficult-to-monitor or unsafe-to-monitor which must include all of the following:

(i) How a difficult-to-monitor or unsafe-to-monitor component can be identified in the field.

(ii) The reasons each component was identified as difficult-to-monitor or unsafe-to-monitor.

(iii) The monitoring schedule for components identified as difficult-to-monitor or unsafe-to-monitor, which must include one survey per year for difficult-to-monitor components.

(e) *Fugitive emissions detection devices.* Fugitive emissions detection devices must be operated and maintained in accordance with manufacturer-recommended procedures, as required by the test method, or a Department-approved method.

(f) *Leak definition.* A leak is defined as:

(1) Any positive indication, whether audible, visual, or odorous, determined during an AVO inspection.

(2) Any visible emissions detected by OGI equipment calibrated according to subsection (d)(6)(i).

(3) A concentration of 500 ppm or greater methane, or equivalent, detected by a gas leak detector calibrated according to subsection (d)(6)(ii).

(g) *Background adjustment.* For LDAR inspections using a gas leak detector in accordance with EPA Method 21, the owner or operator may choose to adjust the detection instrument readings to account for the background organic concentration level as determined according to the procedures of Section 8.3.2 of EPA Method 21.

(h) *Repair provisions.* Any leak detected from a fugitive emission component shall be repaired by the owner or operator of the facility as expeditiously as practicable. A first attempt at repair

must be made within 5 calendar days of detection, and repair must be completed no later than 15 calendar days after the leak is detected unless:

(1) The owner or operator must purchase parts, in which case the repair must be completed no later than 10 calendar days after the receipt of the purchased parts.

(2) The repair or replacement is technically infeasible, would require a vent blowdown, an affected facility shutdown, a well shut-in, or would be unsafe to repair during operation of the unit, the repair or replacement must be completed during the next affected facility shutdown, after a planned vent blowdown, or within 2 years, whichever is earlier.

(i) *Resurvey requirements.* Once a fugitive emission component has been repaired or replaced, the owner or operator must resurvey the component as soon as practicable, but no later than 30 calendar days after the leak is repaired.

(1) For repairs that cannot be made during the monitoring survey when the leak is initially found, the owner or operator shall either:

(i) Take a digital photograph of the component.

(ii) Tag the component for identification purposes.

(2) A leak is considered repaired if:

(i) There are no detectable emissions consistent with Section 8.3.2 of EPA Method 21.

(ii) A leak concentration of less than 500 ppm as methane is detected when the gas leak detector probe inlet is placed at the surface of the component.

(iii) There is no visible leak image when using OGI equipment calibrated according to subsection (d)(6)(i).

(iv) There is no bubbling at the leak interface using a soap solution bubble test specified in Section 8.3.3 of EPA Method 21.

(j) *Recordkeeping requirements.* For each collection of fugitive emissions components at an affected facility, the following records shall be maintained onsite or at the nearest local field office for at least five years:

(1) The fugitive emissions monitoring plan as required in subsection (d).

(2) The records of each monitoring survey including:

(i) The facility name and location.

(ii) The date, start time and end time of the survey.

(iii) The name of the operator performing survey.

(iv) The monitoring instrument used.

(v) The ambient temperature, sky conditions, and maximum wind speed at the time of the survey.

(vi) Any deviations from the monitoring plan or a statement that there were none.

(vii) Documentation of each fugitive emission including:

(A) The identification of each component from which fugitive emissions were detected.

(B) The instrument reading of each fugitive emissions component that meets the leak definition in subsection (f)(3).

(C) The status of repair of each component including:

(I) The repair methods applied in each attempt to repair the component.

(II) The identification of each component not repaired during the monitoring survey in which the fugitive emissions were discovered in accordance with subsection (i)(1).

(III) The reasons a component was placed on delay of repair.

(IV) The date of successful repair of the component.

(V) The information on the instrumentation or method used to resurvey the component after repair, if it was not completed during the monitoring survey in which the fugitive emissions were discovered.

(3) For a well site with a GOR of less than 300 scf per stock barrel of oil produced, the owner or operator must maintain:

(i) The location of the well and the Well Permit ID Number.

(ii) A record of the annual GOR analyses documenting a gas to oil ratio of less than 300 scf per stock barrel of oil produced, conducted using generally accepted methods and signed by the certifying official. The claim must include a certification by a certifying 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.

(k) *Reporting Requirements.* For each affected facility, the records identified in subsection (j)(2) shall be submitted annually.

§ 129.128. Cover and closed vent system requirements for centrifugal compressors, reciprocating compressors, and natural gas-driven diaphragm pumps.

(a) *Cover requirements for centrifugal compressors and reciprocating compressors*. The owner or operator of a source subject to § 129.121(a) (relating to applicability and exceptions) shall comply with all of the following, as applicable, for each affected cover.

(1) *Cover requirements for centrifugal compressors.*

(i) Ensure that the cover and all openings on the cover form a continuous impermeable barrier over the entire surface area of the liquid in the wet seal fluid degassing system.

(ii) Ensure that each cover opening is covered by a gasketed lid or cap that is secured in a closed, sealed position except when it is necessary to use an opening for one or more of the following:

(A) To inspect, maintain, repair or replace equipment.

(B) To route gases or fumes from the centrifugal compressor to a control device or a process through a closed vent system designed and operated in accordance with subsection (b).

(2) *Cover requirements for reciprocating compressors.*

(i) Ensure that the cover and all openings on the cover form a continuous impermeable barrier over the rod packing emissions collection system.

(ii) Ensure that each cover opening is covered by a gasketed lid or cap that is secured in a closed, sealed position except when it is necessary to use an opening ~~as follows~~ for one or more of the following:

(A) To inspect, maintain, repair or replace equipment.

(B) To route gases or fumes from the reciprocating compressor to a process through a closed vent system designed and operated in accordance with subsection (b).

(b) *Closed vent system requirements for centrifugal compressors, reciprocating compressors, and natural gas-driven pneumatic pumps*. The owner or operator of a source subject to § 129.121(a) shall comply with all of the following, as applicable, for each affected closed vent system that routes VOC emissions from the emission source to a control device or to a process.

(1) Design the closed vent system to route all liquids, gases, vapors and fumes emitted from the source to a control device or to a process that meets the requirements specified in §129.129 (relating to control device requirements for centrifugal compressors, reciprocating compressors, and natural gas-driven diaphragm pumps).

(2) Operate the closed vent system with no detectable emissions as initially demonstrated by subsection (d).

(i) For each closed vent system join, seam, or other connection that is permanently or semi-permanently sealed, such as a welded joint between two sections of hard piping or a bolted and gasketed ducting flange, the owner or operator shall:

(A) Conduct annual visual inspections for defects that could result in air emissions. Defects include, but are not limited to, the following:

(I) Visible cracks, holes, or gaps in piping.

(II) Loose connections.

(III) Liquid Leaks.

(IV) Broken or missing caps or other closure devices.

(B) Any time a component is repaired or a connection is unsealed, the owner or operator must demonstrate no detectable missions in accordance with subsection (d).

(ii) For closed vent system components other than those specified in subparagraph (i), the owner or operator shall:

(A) Conduct annual no detectable emissions inspections in accordance with subsection (d).

(B) Conduct annual visual inspections for defects that could result in air emissions. Defects include, but are not limited to, the following:

(I) Visible cracks, holes, or gaps in piping.

(II) Loose connections.

(III) Liquid Leaks.

(IV) Broken or missing caps or other closure devices.

(3) If the closed vent system contains one or more bypass devices; except for low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices; that could be used to divert all or a portion of the liquids, gases, vapors or fumes from routing to the control device or to the process in accordance with §§ 129.125(b)(2), 129.126(b), or 129.126(c) the owner or operator shall:

(i) Properly install, calibrate, maintain and operate a flow indicator at the inlet to the bypass device that could divert the stream away from the control device or process to the atmosphere that sounds an alarm or initiates notification via remote alarm to the nearest field office when the

bypass device is open and the stream is being, or could be, diverted away from the control device or process to the atmosphere and maintain a record in accordance with §§ 129.125(e)(2)(ii), 129.126(f)(1)(v), or 129.126(f)(2)(iv)(B), as applicable of each time the alarm is activated.

(ii) Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration. The owner or operator shall visually inspect the seal or closure mechanism at least monthly to verify that the valve is maintained in the non-diverting position and the vent stream is not diverted through the bypass device. The owner or operator must maintain records of the inspections and records of each time the key is checked out, if applicable, in accordance with §§ 129.125(e)(2)(ii), 129.126(f)(1)(v), or 129.126(f)(2)(iv)(B).

(4) Conduct an assessment of the closed vent system and provide a written certification in accordance with subsection (c).

(c) *Verification and written certification of design and capacity of closed vent systems*. The owner or operator of a closed vent system subject to subsection (b) shall do all of the following:

(1) Conduct an assessment under the direction or supervision of an in-house engineer or professional engineer to verify that the closed vent system is of sufficient design and capacity to ensure that all emissions from the emission source are routed to the control device or process and that the control device or process is of sufficient design and capacity to accommodate all emissions from the emission source.

(2) Prepare the following written certification signed by the in-house engineer or professional engineer that directs or supervises the assessment required in paragraph (1): "I certify that the closed vent system design and capacity assessment was prepared under my direction or supervision. I further certify that the closed vent system design and capacity assessment was conducted and this report was prepared in accordance with 25 Pa Code § 129.129(c)(1). Based on my professional knowledge and experience, and inquiry of personnel involved in the assessment, the certification submitted herein is true, accurate, and complete. I am aware that there are penalties for knowingly submitting false information."

(3) Provide the written certification specified in paragraph (2) to the appropriate Department Regional Air Program Manager.

(d) *No detectable emissions procedures.* The owner or operator must conduct the no detectable emissions test procedure in accordance with EPA Method 21.

(1) Perform the instrument response factor of Section 8.1.1 of EPA Method 21 using the average composition of the fluid, not for each individual organic compound in the stream.

(i) Calculate the average stream response factor on an inert-free basis for process streams that contain nitrogen, air, or other inert gases that are not organic HAPs or VOCs.

(ii) If no instrument is available that will meet the performance criteria of EPA Method 21, the owner or operator may adjust the instrument readings by multiplying by the average response factor of the fluid calculated on an inert-free basis as calculated in subparagraph (i).

(2) The detection instrument must be calibrated using the procedures specified in EPA Method 21 before use on each day of its use using zero air and a mixture of methane in air at a concentration less than 10,000 ppmv as the calibration gases.

(3) The owner or operator may choose to adjust the detection instrument readings to account for the background organic concentration level as determined according to the procedures in EPA Method 21.

(4) The owner or operator shall determine if a potential leak interface operates with no detectable emissions, defined as an organic concentration value less than 500 ppm by volume as methane.

(i) If the owner or operator does not choose to adjust the detection instrument readings for the background organic concentration level, the maximum organic concentration value measured by the detection instrument is compared to the leak definition in paragraph (4).

(ii) If the owner or operator chooses to adjust the detection instrument readings for the background organic concentration level, the arithmetic difference between the maximum organic concentration value measured by the detection instrument and the background organic concentration value as determined in paragraph (3) is compared to the leak definition in paragraph (4).

(5) *Repairs.* If a leak or defect is detected, the owner or operator must repair the leak or defect as soon as practicable according to § 129.127(h) and (i).

§ 129.129. Control device requirements for centrifugal compressors, reciprocating compressors, and natural gas-driven diaphragm pumps.

(a) *Applicability.* The owner or operator of a source subject to § 129.121 (relating to applicability and general provisions) shall comply with paragraphs (1) through (3) for each control device used to comply with the reduction requirements of §§ 129.125(b)(2), 129.126(b), or 129.126(c). Each control device used to meet the VOC emission reduction requirements must be installed according to paragraphs (1) through (3). As an alternative, a control device model tested under § 129.131(e), which meets the criteria in § 129.131(e)(11) and (f) may be installed.

(1) Each combustion device, such as a thermal vapor incinerator, catalytic vapor incinerator, boiler, or process heater, must be designed and operated in accordance with one of the following performance requirements:

(i) To reduce the mass content of VOC in the gases vented to the device by 95.0 % by weight or greater as determined in accordance with § 129.131(c)(3).

(ii) To reduce the concentration of TOC in the exhaust gases at the outlet to the device to a level equal to or less than 275 ppmv as propane on a wet basis corrected to 3 % oxygen as determined in accordance with § 129.131(c)(4).

(iii) To operate at a minimum temperature of 760°Celsius, provided the control device has demonstrated, during the performance test conducted in accordance with § 129.131(c)(4), that combustion zone temperature is an indicator of destruction efficiency.

(iv) To introduce the vent stream into the flame zone of the boiler or process heater, if a boiler or process heater is used as the control device.

(2) Each vapor recovery device, such as a carbon adsorption system, condenser, or other non-destructive control device, must be designed and operated to reduce the mass content of VOC in the gases vented to the device by 95.0 % by weight or greater as determined in accordance with the requirements of § 129.131(c). As an alternative to the performance testing requirements, the owner or operator may demonstrate initial compliance by conducting a design analysis for vapor recovery devices according to the requirements of § 129.131(d).

(3) Each flare must be designed and operated in accordance with the requirements of 40 CFR 60.18(b). Compliance determinations must be conducted using EPA Method 22 to determine visible emissions.

(b) Each control device installed to control VOC emissions from an emissions source must be operated in accordance with the following requirements:

(1) Each control device must be operated at all times when liquids, gases, vapors, and fumes are vented from an emissions source through the closed vent system to the control device. More than one source may be routed to a control device.

(2) For each control device monitored in accordance with the requirements of § 129.130 (relating to continuous control device monitoring requirements), continuous compliance must be demonstrated according to the requirements of § 129.126(d) for centrifugal compressors, as applicable.

(c) For each carbon adsorption system used as a control device to meet the requirements of subsection (a)(2), the carbon must be managed as follows:

(1) Following the compliance date for the source using the control device, all carbon in the control device must be replaced with fresh carbon on a regular, predetermined time interval that is no longer than the carbon service life established according to § 129.131(d)(2) or (3) or according to the design required in subsection (a)(2) for the carbon adsorption system. Records identifying the schedule for replacement and records of each carbon replacement shall be maintained.

(2) The spent carbon removed from the carbon adsorption system must be regenerated, reactivated, or burned in one of the following units:

(i) Regenerate or reactivate the spent carbon in a thermal treatment unit for which a final permit has been issued under 40 CFR part 270 (relating to EPA administered permit programs: the hazardous waste permit program) that implements the requirements of 40 CFR part 264, subpart X (relating to standards for owners and operators of miscellaneous hazardous waste treatment, storage, and disposal facilities).

(ii) Regenerate or reactivate the spent carbon in a unit equipped with operating organic air emission controls in accordance with an emissions standard for VOC under a subpart in 40 CFR part 60 (relating to standards of performance for new stationary sources) or part 63 (relating to national emission standards for hazardous air pollutants for source categories).

(iii) Burn the spent carbon in a hazardous waste incinerator for which the owner or operator complies with the requirements of 40 CFR part 63, subpart EEE (relating to national emission standards for hazardous air pollutants from hazardous waste combustors) and has submitted a Notification of Compliance under 40 CFR 63.1207(j) (relating to performance testing requirements).

(iv) Burn the spent carbon in a hazardous waste boiler or industrial furnace for which the owner or operator complies with the requirements of 40 CFR part 63, subpart EEE (relating to national emission standards for hazardous air pollutants from hazardous waste combustors) and has submitted a Notification of Compliance under 40 CFR 63.1207(j) (relating to performance testing requirements).

(v) Burn the spent carbon in an industrial furnace for which a final permit has been issued under 40 CFR part 270 (relating to EPA administered permit programs: the hazardous waste permit program) that implements the requirements of 40 CFR part 266, subpart H (relating to hazardous waste burned in boilers and industrial furnaces).

(vi) Burn the spent carbon in an industrial furnace that is designed and operated in accordance with the interim status requirements of 40 CFR part 266, subpart H (relating to hazardous waste burned in boilers and industrial furnaces).

§ 129.130. Continuous control device monitoring requirements.

(a) For each control device used to comply with the VOC emission reduction requirements, a continuous parameter monitoring system shall be installed and operated for each control device as specified in subsections (c) through (g), except as provided for in subsection (b). A flare installed and operated in accordance with § 129.129(a)(3) is exempt from the requirements of subsections (e) and (f).

(b) The following control devices are exempt from the monitoring requirements specified in subparagraphs (c) through (g):

(1) A boiler or process heater in which all vent streams are introduced with the primary fuel, or used as the primary fuel.

(2) A boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts.

(c) If a continuous parameter monitoring system is required to be installed, the following specifications and requirements must be met:

(1) Each continuous parameter monitoring system must measure data values at least once every hour and record the following parameters:

(i) Each measured data value.

(ii) Each block average value for each 1-hour period or shorter periods calculated from all measured data values during each period. If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the hourly (or shorter period) block average instead of all measured values.

(2) A site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in subparagraphs (i) through (v). Each continuous parameter monitoring system must be installed, calibrated, operated, and maintained in accordance with the procedures in the approved site-specific monitoring plan. Heat sensing monitoring devices that indicate the continuous ignition of a pilot flame are exempt from the calibration, quality assurance and quality control requirements in this section.

(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, such as a thermocouple, location such that the monitoring system will provide representative measurements.

(iii) Equipment performance checks, system accuracy audits, or other audit procedures.

(iv) Ongoing operation and maintenance procedures in accordance with provisions in 40 CFR 60.13(b) (relating to monitoring requirements).

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in 40 CFR 60.7(c), (d), and (f) (relating to notification and record keeping).

(3) Conduct the continuous parameter monitoring system equipment performance checks, system accuracy audits, or other audit procedures specified in the site-specific monitoring plan at least once every 12 months.

(4) Conduct a performance evaluation of each continuous parameter monitoring system in accordance with the site-specific monitoring plan. Heat sensing monitoring devices that indicate the continuous ignition of a pilot flame are exempt from the calibration, quality assurance and quality control requirements in this section.

(d) Install, calibrate, operate, and maintain a device equipped with a continuous recorder to measure the values of operating parameters appropriate for the control device as follows:

(1) A continuous monitoring system that measures the following operating parameters, as applicable:

(i) For a thermal vapor incinerator that demonstrates during the performance test conducted in accordance with § 129.131(c)(4) that combustion zone temperature is an accurate indicator of performance, a temperature monitoring device equipped with a continuous recorder that meets the following specifications:

(A) The monitoring device must have a minimum accuracy of ±1 % of the temperature being monitored in °Celsius, or ±2.5°Celsius, whichever value is greater.

(B) The temperature sensor at a location representative of the combustion zone temperature.

(ii) For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder that meets the following specifications:

(A) The device must have a minimum accuracy of ±1 % of the temperature being monitored in °Celsius, or ±2.5°Celsius, whichever value is greater.

(B) The device must be capable of monitoring temperature at two locations:

(I) The first temperature sensor must be installed in the vent stream at the nearest feasible point to the catalyst bed inlet.

(II) The second temperature sensor must be installed in the vent stream at the nearest feasible point to the catalyst bed outlet.

(iii) For a flare, a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame. The heat sensing monitoring device is exempt from calibration requirements.

(iv) For a boiler or process heater, a temperature monitoring device equipped with a continuous recorder that meets the following specifications:

(A) The temperature monitoring device must have a minimum accuracy of ±1 % of the temperature being monitored in °Celsius, or ±2.5°Celsius, whichever value is greater.

(B) The temperature sensor must be installed at a location representative of the combustion zone temperature.

(v) For a condenser, a temperature monitoring device equipped with a continuous recorder that meets the following specifications:

(A) The temperature monitoring device must have a minimum accuracy of ±1 % of the temperature being monitored in °Celsius, or ±2.5°Celsius, whichever value is greater.

(B) The temperature sensor must be installed at a location in the exhaust vent stream from the condenser.

(vi) For a regenerative-type carbon adsorption system, a continuous monitoring system that meets the following specifications:

(A) The flow continuous parameter monitoring system must measure and record the average total regeneration stream mass flow or volumetric flow during each carbon bed regeneration cycle that meets the following specifications:

(I) The flow sensor must have a measurement sensitivity of 5 % of the flow rate or 10 cubic feet per minute, whichever is greater.

(II) The mechanical connections for must be checked for leakage at least every month.

(III) If the flow continuous parameter monitoring system is not equipped with a redundant flow sensor, a visual inspection must be performed quarterly of:

(-a-) All components of the flow continuous parameter monitoring system for physical and operational integrity.

(-b-) All electrical connections for oxidation and galvanic corrosion.

(B) The temperature continuous parameter monitoring system must measure and record the average carbon bed temperature for the duration of the carbon bed steaming cycle and measure the actual carbon bed temperature after regeneration and within 15 minutes of completing the cooling cycle. The temperature monitoring device must have a minimum accuracy of ±1 % of the temperature being monitored in °Celsius, or ±2.5°Celsius, whichever value is greater.

(vii) For a non-regenerative-type carbon adsorption system, the design carbon replacement interval established using a design analysis performed as specified in § 129.131(d)(3) must be monitored. The design carbon replacement interval must be based on the total carbon working capacity of the control device and source operating schedule.

(viii) For a combustion control device whose model is tested in accordance with § 129.131(e), unless the periodic testing requirements of § 129.131(c)(5)(ii) are met, a continuous monitoring system that meets the following requirements:

(A) The continuous monitoring system must measure gas flow rate at the inlet to the control device. The monitoring instrument must have an accuracy of ±2 % or better at the maximum expected flow rate. The flow rate at the inlet to the combustion device must not exceed the maximum or minimum flow rate determined by the manufacturer.

(B) A monitoring device that continuously indicates the presence of the pilot flame while emissions are routed to the control device.

(2) An organic monitoring device equipped with a continuous recorder that measures the concentration level of organic compounds in the exhaust vent stream from the control device. The monitor must meet the requirements of EPA Performance Specification 8 or EPA Performance Specification 9. The monitor must be installed, calibrated, and maintained according to the manufacturer's specifications.

(e) Calculate the daily average value for each monitored operating parameter, except for inlet gas flow rate and data from the heat sensing devices that indicate the presence of a pilot flame, for each operating day, using the data recorded by the monitoring system. If the emissions unit operation is continuous, the operating day is a 24-hour period. If the emissions unit operation is not continuous, the operating day is the total number of hours of control device operation per 24-

hour period. Valid data points must be available for 75 % of the operating hours in an operating day to compute the daily average.

(f) For all control devices, each operating parameter monitor installed in accordance with the requirements of subsection (d) must establish a minimum operating parameter value or a maximum operating parameter value, as appropriate for the control device, to define the conditions at which the control device must be operated to continuously achieve the applicable performance requirements of § 129.129(a)(1) or (2). Each minimum or maximum operating parameter value must be established as follows:

(1) If a performance test in accordance with § 129.131(c) was conducted to demonstrate that the control device achieves the applicable performance requirements specified in § 129.129(a)(1) or (2), establish the minimum operating parameter value or the maximum operating parameter value based on values measured during the performance test and supplemented, as necessary, by a condenser design analysis or control device manufacturer recommendations or a combination of both.

(2) If a control device design analysis meeting the requirements of § 129.131(d) is used to demonstrate that the control device achieves the applicable performance requirements specified in § 129.129(a)(2), establish the minimum operating parameter value or the maximum operating parameter value based on the condenser design analysis and supplemented, as necessary, by the condenser manufacturer's recommendations.

(3) If a control device where the performance test requirement was met under § 129.131(e) to demonstrate that the control device achieves the applicable performance requirements specified in § 129.129(a)(1), then the control device inlet gas flow rate must not exceed the maximum or minimum inlet gas flow rate determined by the manufacturer.

(g) For condensers, in addition to the requirements of subsection (f), a condenser performance curve showing the relationship between condenser outlet temperature and condenser control efficiency, shall be established as follows:

(1) If a performance test in accordance with § 129.131(c) was conducted to demonstrate that the condenser achieves the applicable performance requirements in § 129.129(a)(2), the condenser performance curve must be based on values measured during the performance test and supplemented as necessary by control device design analysis, or control device manufacturer's recommendations, or a combination or both.

(2) If the owner or operator uses a condenser design analysis meeting the requirements of § 129.131(d)(1) to demonstrate that the condenser achieves the applicable performance

requirements specified in § 129.129(a)(2), then the condenser performance curve must be based on the condenser design analysis and supplemented, as necessary, by the control device manufacturer's recommendations.

(h) A deviation for a given control device is determined to have occurred when the monitoring data or lack of monitoring data result in any one of the criteria specified in paragraphs (1) through (6) are met. If multiple operating parameters for the same control device are monitored during the same operating day and more than one of these operating parameters meets a deviation criterion specified in paragraphs (1) through (6), then a single excursion is determined to have occurred for the control device for that operating day.

(1) A deviation occurs when the daily average value of a monitored operating parameter is less than the minimum operating parameter limit or greater than the maximum operating parameter limit established in subsection (f) or when the heat sensing device indicates that there is no pilot flame present.

(2) If subject to § 129.129(a)(2), a deviation occurs when the 365-day average condenser efficiency calculated according to the requirements specified in § 129.126(d)(2)(ii)(H)(IV) is less than 95.0 %.

(3) If subject to § 129.129(a)(2) and the owner or operator has less than 365 days of data, a deviation occurs when the average condenser efficiency calculated according to the procedures specified in § 129.126(d)(2)(ii)(H)(IV)(-a-) or (-b-) is less than 95.0 %.

(4) A deviation occurs when the monitoring data are not available for at least 75 % of the operating hours in a day.

(5) If the closed vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control device, a deviation occurs when the following requirements are met:

(i) For each bypass line subject to § 129.128(b)(3)(i), the flow indicator indicates that flow has been detected and that the stream has been diverted away from the control device to the atmosphere.

(ii) For each bypass line subject to § 129.128(b)(3)(ii), if the seal or closure mechanism has been broken, the bypass line valve position has changed, the key for the lock-and-key type lock has been checked out, or the car-seal has broken.

(6) For a combustion control device whose model is tested in accordance with § 129.131(e), a deviation occurs when the following conditions are met:

(i) The inlet gas flow rate exceeds the maximum established during the test conducted under § 129.131(e).

(ii) Failure of the monthly visible emissions test conducted under § 129.131(f)(2)(iii) occurs.

§ 129.131. Performance test and design analysis procedures.

(a) *Applicability.* Except as specified in subsection (b), this section applies to the owner or operator of each control device used to achieve compliance with §§ 129.125 and 129.126 (relating pneumatic pumps and compressors). The control device must achieve the performance requirements specified in § 129.126(b) for each centrifugal compressor wet seal degassing system using the performance test methods and procedures specified in this section. The owner or operator may use a design analysis as specified in subsection (d) for condensers and carbon adsorbers, in place of complying with subsection (c) of this section.

(b) *Performance test and design analysis exemptions.* An owner or operator subject to subsection (a) is exempt from the requirement to conduct a performance test under subsection (c) or a design analysis under subsection (d) for all of the following control devices:

(1) A flare that is designed for and operated with no visible emissions in accordance with 40 CFR 60.18(b) (relating to general control device and work practice requirements). EPA Method 22 shall be used to determine visible emissions.

(2) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(3) A boiler or process heater into which the vent stream is introduced with the primary fuel or is used as the primary fuel.

(4) A boiler or process heater burning hazardous waste that meets one or more of the following:

(i) For which a final operating permit was issued under 40 CFR Part 270 (relating to EPA administered permit programs: the hazardous waste permit program) prior to ***blank*** (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking as a final-form rulemaking.) and which complies with the requirements of 40 CFR Part 266, Subpart H (relating to standards for the management of specific hazardous wastes and specific types of hazardous waste management facilities).

(ii) For which compliance with the interim status requirements of 40 CFR Part 266, Subpart H has been certified.

(iii) Which complies with 40 CFR Part 63, Subpart EEE (relating to national emission standards for hazardous air pollutants from hazardous waste combustors) and for which a Notification of Compliance under 40 CFR 63.1207(j) (relating to the performance testing requirements) was submitted to the Department prior to ***blank*** (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking as a final-form rulemaking.).

(iv) Which complies with 40 CFR Part 63, Subpart EEE and for which a Notification of Compliance under 40 CFR 63.1207(j) will be submitted *to the Department* within 90 days of the completion of the initial performance unless a written request for an extension is submitted to the Department.

(5) A hazardous waste incinerator which complies with 40 CFR Part 63, Subpart EEE and for which a Notification of Compliance under 40 CFR 63.1207(j) was submitted to the Department prior to ***blank*** (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking as a final-form rulemaking.) or for which a Notification of Compliance under 40 CFR 63.1207(j) will be submitted to the Department within 90 days of the completion of the initial performance unless a written request for an extension is submitted to the Department.

(6) A control device for which a performance test is waived in accordance with 40 CFR 60.8(b) (relating to performance tests).

(7) A combustion control device whose model can be demonstrated to meet the performance requirements of § 129.129(a)(1) (relating to control device requirements for centrifugal compressors, reciprocating compressors, and natural gas-driven diaphragm pumps) through a performance test conducted by the combustion control device manufacturer, as specified in subsection (e).

(c) *Performance test methods and procedures.* Except as specified in subsection (d), the owner or operator of a control device subject to subsection (a) shall use the test methods and procedures specified in paragraphs (1)—(6), as applicable, for each performance test conducted to demonstrate that the control device achieves the control device percent reduction requirements of § 129.123, § 129.125(b)(2), § 129.126(b) or § 129.126(c). Initial and periodic performance tests according to the schedule specified in paragraph (c)(6) of this section. Each performance test must consist of a minimum of 3 test runs. Each run must be at least 1-hour long. The owner or operator shall do all of the following, as applicable:

(1) Use EPA Method 1 or EPA Method 1A, as appropriate, to select the sampling sites specified in subparagraphs (i) and (ii). References to particulate in EPA Method 1 or EPA Method 1A do not apply to this paragraph.

(i) Sampling sites must be located at the inlet of the first control device and at the outlet of the final control device to determine compliance with the control device percent reduction requirement.

(ii) The sampling site must be located at the outlet of the combustion device to determine compliance with the enclosed combustion device TOC exhaust gas concentration limit.

(2) Use EPA Method 2, EPA Method 2A, EPA Method 2C or EPA Method 2D, as appropriate, to determine the gas volumetric flowrate.

(3) Use EPA Method 25A to determine compliance with the control device percent reduction requirement in §§ 129.123, § 129.129(a)(1)(i)(A) or § 129.129(a)(2), use EPA Method 4 to convert the EPA Method 25A results to a dry basis, and use the following procedures to calculate control device percent reduction efficiency:

(i) Compute the mass rate of TOC using the following equations:

$$E_i = K_2 C_i M_p Q_i$$

$$E_o = K_2 C_o M_p Q_o$$

Where:

E_i = Mass rate of TOC at the inlet of the control device on a dry basis, kilograms per hour.

E_o = Mass rate of TOC at the outlet of the control device on a dry basis, kilograms per hour.

K_2 = Constant, 2.494×10^{-6} (parts per million) (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature (gram-mole per standard cubic meter) is 20°Celsius.

C_i = Concentration of TOC, as propane, of the gas stream as measured by EPA Method 25A at the inlet of the control device on a dry basis, parts per million by volume.

C_o = Concentration of TOC, as propane, of the gas stream as measured by EPA Method 25A at the outlet of the control device on a dry basis, parts per million by volume.

M_p = Molecular weight of propane, 44.1 gram/gram-mole.

Q_i = Flowrate of gas stream at the inlet of the control device, dry standard cubic meter per minute.

Q_o = Flowrate of gas stream at the outlet of the control device, dry standard cubic meter per minute.

(ii) Calculate the percent reduction in TOC using the following equation:

$$R_{cd} = \left(\frac{E_i - E_o}{E_i}\right) * 100\%$$

Where:

R_{cd} = Control efficiency of control device, percent.

E_i, = Mass rate of TOC at the inlet to the control device as calculated in subparagraph (i), kilograms per hour.

E_o = Mass rate of TOC at the outlet of the control device as calculated in subparagraph (i), kilograms per hour.

(iii) If the vent stream entering a boiler or process heater with a design capacity less than 44 megawatts is introduced with the combustion air or as a secondary fuel, determine the weight-percent reduction of total TOC across the control device by comparing the TOC in all combusted vent streams and primary and secondary fuels with the TOC exiting the control device.

(4) Use EPA Method 25A to measure TOC, as propane, to determine compliance with the TOC exhaust gas concentration limit specified in § 129.123(b)(5)(i)(G)(II) or § 129.129(a). The measured concentrations of methane and ethane may be subtracted from the EPA Method 25A result if determined in accordance with paragraph (5).

(5) EPA Method 18 may be used to measure methane and ethane, which may be subtracted from the EPA Method 25A measurement to demonstrate compliance with the concentration limit. The concentration must be determined in parts per million by volume on a wet basis and corrected to 3% oxygen, using the following procedures:

(i) If using EPA Method 18 to determine methane and ethane, take either:

(A) An integrated sample.

(B) A minimum of four grab samples per hour using the following procedures:

(I) Take the samples at approximately equal intervals in time, such as 15-minute intervals during the run.

(II) Take the samples during the same time as the EPA Method 25A sample.

(III) The average methane and ethane concentration per run must be determined.

(ii) The concentration of methane and ethane may be subtracted from the EPA Method 25A TOC, as propane, concentration for each run.

(iii) The TOC concentration (minus methane and ethane, if applicable) must be corrected to 3 % oxygen as specified in paragraphs (4)(iii)(A) and (B) of this section.

(A) The emission rate correction factor for excess air, integrated sampling and analysis procedures of EPA Method 3A or EPA Method 3B, ASTM D6522-00, or ANSI/ASME PTC 19.10-1981, Part 10 must be used to determine the oxygen concentration. The samples must be taken during the same time that the samples are taken for determining TOC concentration.

(B) The TOC concentration for percent oxygen must be corrected as follows:

$$C_c = C_m \left(\frac{17.9}{20.9 - \%O_{2m}} \right)$$

Where:

C_c = TOC concentration, as propane, corrected to 3 % oxygen, parts per million by volume on a wet basis.

C_m = TOC concentration, as propane, (minus methane and ethane, if applicable), parts per million by volume on a wet basis.

$\%O_{2m}$ = Concentration of oxygen, percent by volume as measured, wet.

(6) The owner or operator shall conduct performance tests according to the following schedule:

(i) An initial performance test must be conducted within 180 days after the compliance date for the source.

(ii) Periodic performance tests for all control devices required to conduct initial performance tests must be conducted except as specified in clauses (A) and (B). The first periodic performance test must be conducted no later than 60 months after the initial performance test required in subparagraph (i). Subsequent periodic performance tests must be conducted at intervals no longer than 60 months following the previous periodic performance test or whenever establishing a new operating limit.

(A) A control device whose model is tested under, and meets the criteria of subsection (e). For centrifugal compressors, if the gas flow rate is not continuously monitored in accordance with § 129.130(d)(1)(viii), then the owner or operator must comply with the periodic performance testing requirements of paragraph (6)(ii).

(B) A combustion control device tested under subsection (c) that meets the outlet TOC performance level specified in § 129.129(a)(1)(i)(B) and that establishes a correlation between firebox or combustion chamber temperature and the TOC performance level. For centrifugal compressors, the owner or operator must establish a limit on temperature in accordance with § 129.130(f) and continuously monitor the temperature as required by § 129.130(d).

(d) *Control device design analysis*. An owner or operator of a control device subject to subsection (a) may use a control device design analysis to demonstrate compliance with § 129.129(a)(2) in place of the performance test methods and procedures in subsection (c).

(1) The owner or operator shall do all of the following, as applicable:

(i) For a condenser, the design analysis shall:

(A) Include an analysis of the vent stream composition.

(B) Include the constituent concentrations.

(C) Include the flowrate.

(D) Include the relative humidity.

(E) Include the temperature.

(F) Establish the design outlet organic compound concentration level.

(G) Establish the design average temperature of the condenser exhaust vent stream.

(H) Establish the design average temperatures of the coolant fluid at the condenser inlet and outlet.

(ii) For a regenerable carbon adsorption system, the design analysis shall:

(A) Include the vent stream composition

(B) Include the constituent concentrations.

(C) Include the flowrate.

(D) Include the relative humidity.

(E) Include the temperature.

(F) Establish the design exhaust vent stream organic compound concentration level.

(G) Establish the adsorption cycle time.

(H) Establish the number and capacity of carbon beds.

(I) Establish the type and working capacity of activated carbon used for the carbon beds.

(J) Establish the design total regeneration stream flow over the period of each complete carbon bed regeneration cycle.

(K) Establish the design carbon bed temperature after regeneration.

(L) Establish the design carbon bed regeneration time.

(M) Establish the design service life of the carbon.

(iii) For a non-regenerable carbon adsorption system, such as a carbon canister, the design analysis shall:

(A) Include the vent stream composition

(B) Include the constituent concentrations.

(C) Include the flowrate.

(D) Include the relative humidity.

(E) Include the temperature.

(F) Establish the design exhaust vent stream organic compound concentration level.

(G) Establish the capacity of the carbon bed.

(H) Establish the type and working capacity of activated carbon used for the carbon bed.

(I) Establish the design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(J) Incorporate dual carbon canisters in case of emission breakthrough occurring in one canister.

(2) If the owner or operator and the Department do not agree on a demonstration of control device performance using a design analysis, then the owner or operator shall perform a performance test in accordance with subsection (c) to resolve the disagreement. The Department may choose to have an authorized representative observe the performance test.

(e) *Performance testing for combustion control devices—manufacturer's performance test.* An owner or operator of a combustion control device subject to subsection (a) that seeks an exemption from subsections (c) and (d) in accordance with subsection (b)(7) shall submit to the Department a performance test report in accordance with paragraph (12) documenting the manufacturer's performance test for the combustion control device that demonstrates that the owner's or operator's specific model of combustion control device achieves the applicable performance requirements.

(1) The control device manufacturer must demonstrate that the specific model of control device achieves the performance requirements in paragraph (11) by conducting a performance test as specified in paragraphs (2)—(10).

(2) The control device manufacturer's performance testing must do all of the following:

(i) Use propene (propylene) gas for the testing fuel.

(ii) Use an independent third-party laboratory not affiliated with the control device manufacturer to perform the fuel analyses.

(iii) Consist of three 1-hour or longer test runs for each of the four firing rate settings specified in clauses (A)—(D) for a total of 12 test runs per test.

(A) 90%-100% of maximum design rate (fixed rate).

(B) 70%-100%-70% (ramp up, ramp down). Begin the test at 70% of the maximum design rate. During the first 5 minutes, incrementally ramp the firing rate to 100% of the maximum design rate. Hold at 100% for 5 minutes. In the 10-15 minute time range, incrementally ramp back down to 70% of the maximum design rate. Repeat three more times for a total of 60 minutes of sampling.

(C) 30%-70%-30% (ramp up, ramp down). Begin the test at 30% of the maximum design rate. During the first 5 minutes, incrementally ramp the firing rate to 70% of the maximum design rate. Hold at 70% for 5 minutes. In the 10-15 minute time range, incrementally ramp back down to 30% of the maximum design rate. Repeat three more times for a total of 60 minutes of sampling.

(D) 0%-30%-0% (ramp up, ramp down). Begin the test at the minimum firing rate. During the first 5 minutes, incrementally ramp the firing rate to 30% of the maximum design rate. Hold at 30% for 5 minutes. In the 10-15 minute time range, incrementally ramp back down to the minimum firing rate. Repeat three more times for a total of 60 minutes of sampling.

(3) All models employing multiple enclosures must be tested simultaneously and with all burners operational. Results must be reported for each enclosure individually and for the average of the emissions from all interconnected combustion enclosures or chambers. Control device operating data must be collected continuously throughout the performance test using an electronic Data Acquisition System. A graphic presentation or strip chart of the control device operating data and emissions test data must be included in the test report submitted to the Department in accordance with paragraph (12). Inlet fuel meter data may be manually recorded provided that all inlet fuel data readings are included in the final report.

(4) Inlet testing must be conducted as specified in subparagraphs (4)(i) and (ii).

(i) The inlet gas flow metering system must be located in accordance with EPA Method 2A or other procedure approved by the Division of Source Testing and Monitoring to measure inlet gas flow rate at the control device inlet location. The fitting for filling fuel sample containers must be positioned a minimum of eight pipe diameters upstream of any inlet gas flow monitoring meter.

(ii) Inlet flow rate must be determined using EPA Method 2A. Record the start and stop reading for each 60-minute TOC test. Record the gas pressure and temperature at 5-minute intervals throughout each 60-minute test.

(5) Inlet gas sampling must be conducted as specified in subparagraphs (i) and (ii).

(i) At the inlet gas sampling location, securely connect a Silonite-coated stainless steel evacuated canister fitted with a flow controller sufficient to fill the canister over a 3-hour period. Filling must be conducted as specified in clauses (A)—(C).

(A) Open the canister sampling valve at the beginning of each test run and close the canister at the end of each test run.

(B) Fill one canister across the three test runs such that one composite fuel sample exists for each test condition.

(C) Label the canisters individually and record sample information on a chain of custody form.

(ii) Analyze each inlet gas sample using the methods in clauses (A)—(C). The results must be included in the test report required in paragraph (12).

(A) Hydrocarbon compounds containing between one and five atoms of carbon plus benzene using ASTM D1945-03.

(B) Hydrogen (H_2), carbon monoxide (CO), carbon dioxide (CO_2), nitrogen (N_2), oxygen (O_2) using ASTM D1945-03.

(C) Higher heating value using ASTM D3588-98 or ASTM D4891-89.

(6) Outlet testing must be conducted in accordance with the criteria in subparagraphs (i)—(v).

(i) Sample and flow rate must be measured in accordance with clauses (A) and (B).

(A) The outlet sampling location must be a minimum of four equivalent stack diameters downstream from the highest peak flame or any other flow disturbance, and a minimum of one equivalent stack diameter upstream of the exit or any other flow disturbance. A minimum of two sample ports must be used.

(B) Flow rate must be measured using EPA Method 1 for determining flow measurement traverse point location, and EPA Method 2 for measuring duct velocity. If low flow conditions are encountered, such as velocity pressure differentials less than 0.05 inches of water, during the performance test, a more sensitive manometer must be used to obtain an accurate flow profile.

(ii) Molecular weight and excess air must be determined as specified in paragraph (7).

(iii) Carbon monoxide must be determined as specified in paragraph (8).

(iv) THC must be determined as specified in paragraph (9).

(v) Visible emissions must be determined as specified in paragraph (10).

(7) Molecular weight and excess air must be determined as specified in subparagraphs (i)—(iii).

(i) An integrated bag sample must be collected during the moisture test required by EPA Method 4 following the procedure specified in clauses (A) and (B). Analyze the bag sample using a GC-TCD analysis meeting the criteria in clauses (C) and (D).

(A) Collect the integrated sample throughout the entire test, and collect representative volumes from each traverse location.

(B) Purge the sampling line with stack gas before opening the valve and beginning to fill the bag. Clearly label each bag and record sample information on a chain of custody form.

(C) The bag contents must be vigorously mixed prior to the gas chromatograph analysis.

(D) The GC-TCD calibration procedure in EPA Method 3C must be modified by using EPA Alt-045 as follows:

(I) For the initial calibration, triplicate injections of any single concentration must agree within 5% of their mean to be valid.

(II) The calibration response factor for a single concentration re-check must be within 10% of the original calibration response factor for that concentration. If this criterion is not met, repeat the initial calibration of subclause (I) using at least three concentration levels.

(ii) Calculate and report the molecular weight of oxygen, carbon dioxide, methane, and nitrogen in the integrated bag sample and include in the test report specified in paragraph (12). Moisture must be determined using EPA Method 4. Traverse both ports with the EPA Method 4 sampling train during each test run. Ambient air must not be introduced into the integrated bag sample required by EPA Method 3C sample during the port change.

(iii) Excess air must be determined using resultant data from the EPA Method 3C test and EPA Method 3B equation 3B-1, or ANSI/ASME PTC 19.10-1981, Part 10.

(8) Carbon monoxide must be determined using EPA Method 10. Run the test simultaneously with EPA Method 25A using the same sampling points. An instrument range of 0-10 ppmvd is recommended.

(9) Total hydrocarbon determination must be performed as specified in subparagraphs (i)—(vii).

(i) Conduct THC sampling using EPA Method 25A except that the option for locating the probe in the center 10% of the stack is not allowed. The THC probe must be traversed to 16.7%, 50% and 83.3% of the stack diameter during each test run.

(ii) A valid test must consist of three EPA Method 25A test runs, each no less than 60 minutes in duration.

(iii) A measurement range of 0-10 ppmvw (as propane) measurement range is preferred; as an alternative a measurement range of 0—30 ppmvw (as carbon) may be used.

(iv) Calibration gases must be propane in air and be certified through EPA Protocol 1.

(v) THC measurements must be reported in terms of ppmvw as propane.

(vi) THC results must be corrected to 3% CO_2, as measured by EPA Method 3C. The following equation must be used for this diluent concentration correction:

$$C_{corr} = C_{meas}\left(\frac{3}{CO_{2meas}}\right)$$

Where:

C_{meas} = The measured concentration of the pollutant.

CO_{2meas} = The measured concentration of the CO_2 diluent.

3 = The corrected reference concentration of CO_2 diluent.

C_{corr} = The corrected concentration of the pollutant.

(vii) Subtraction of methane or ethane from the THC data is not allowed in determining results.

(10) Visible emissions must be determined using EPA Method 22. The test must be performed continuously during each test run. A digital color photograph of the exhaust point, taken from the position of the observer and annotated with date and time, must be taken once per test run and the 12 photos included in the test report specified in paragraph (12).

(11) The performance test results for the control device model tested must meet the criteria in subparagraphs (i)—(iii).

(i) The control device model test results from paragraphs (2)—(10) must meet the criteria in clauses (A)—(D). The test results and these criteria must be reported in the test report required in paragraph (12).

(A) Results from EPA Method 22 specified in paragraph (10) with no indication of visible emissions.

(B) Average EPA Method 25A results specified in paragraph (9) equal to or less than 10.0 ppmvw THC as propane corrected to 3.0% CO_2.

(C) Average CO emissions determined in accordance with paragraph (8) equal to or less than 10 ppmvd, corrected to 3.0% CO_2.

(D) Excess combustion air determined in accordance with paragraph (7) equal to or greater than 150%.

(ii) The manufacturer must determine a maximum inlet gas flow rate which must not be exceeded for each control device model to achieve the criteria in subparagraph (iii). The maximum inlet gas flow rate must be included in the test report required by paragraph (12).

(iii) The manufacturer must demonstrate a destruction efficiency of at least 95.0% for THC, as propane. A control device model that demonstrates a destruction efficiency of at least 95.0% for THC, as propane, will meet the control requirement for 95.0% destruction of VOC required under this rule.

(12) The owner or operator of a combustion control device model tested in accordance with this subsection shall submit the information listed in subparagraphs (i)—(vi) in the test report. Owners or operators who claim that any of the performance test information being submitted is confidential business information (CBI) must submit a complete file including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to the appropriate regional office.

(i) A full schematic of the control device and dimensions of the device components.

(ii) The maximum net heating value of the device.

(iii) The test fuel gas flow range in both mass and volume. Include the maximum allowable inlet gas flow rate.

(iv) The air or steam injection or assist ranges, if used.

(v) The test conditions listed in clauses (A)—(O), as applicable for the tested model.

(A) Fuel gas delivery pressure and temperature.

(B) Fuel gas moisture range.

(C) Purge gas usage range.

(D) Condensate (liquid fuel) separation range.

(E) Combustion zone temperature range. This is required for all devices that measure this parameter.

(F) Excess air range.

(G) Flame arrestor.

(H) Burner manifold.

(I) Pilot flame indicator.

(J) Pilot flame design fuel and calculated or measured fuel usage.

(K) Tip velocity range.

(L) Momentum flux ratio.

(M) Exit temperature range.

(N) Exit flow rate.

(O) Wind velocity and direction.

(vi) The test report must include all calibration quality assurance and quality control data, calibration gas values, gas cylinder certification, strip charts or other graphic presentations of the data annotated with test times and calibration values.

(f) *Continuous compliance for combustion control devices tested by the manufacturer in accordance with subsection (e).* An owner or operator of a control device subject to subsection (a) shall demonstrate that the control device achieves the performance requirements in subsection (e)(11) by doing all of the following:

(1) Installing a device tested under subsection (e).

(2) Complying with all of the following:

(i) The inlet gas flow rate must be equal to or less than the maximum specified by the manufacturer.

(ii) A pilot flame must be present at all times of operation.

(iii) The control device must be operated with no visible emissions, except for periods not to exceed a total of 1 minute during any 15-minute period. A visible emissions test conducted according to section 11 of EPA Method 22 must be performed at least once every calendar month, separated by at least 15 days between each test. The observation period shall be 15 minutes.

(iv) A control device failing the visible emissions test must be repaired in accordance with the manufacturer's repair instructions, if available, or best combustion engineering practice as outlined in the control device inspection and maintenance plan, to return the control device to

compliant operation. All inspection, repair and maintenance activities for each control device must be recorded in a maintenance and repair log and must be available for inspection.

(v) Following return to operation from maintenance or repair activity, each control device must pass a visual emissions test conducted as described in subparagraph (iii).

(vi) If the owner or operator operates a combustion control device model tested under this section, an electronic copy of the performance test results required by this section shall be submitted via email to the appropriate regional office.

(vii) Ensure that each enclosed combustion control device is maintained in a leak free condition.

(viii) Operate each control device following the manufacturer's written operating instructions, procedures and maintenance schedule to ensure good air pollution control practices for minimizing emissions.

(3) Maintaining the records specified in §§ 129.123(k), 129.125(e), and 129.126(h).