

10 CSR 10-5.500 Control of Emissions From Volatile Organic Liquid Storage

(1) Applicability.

(A) This rule applies throughout the City of St. Louis and St. Charles, St. Louis, Jefferson, and Franklin Counties.

(B) This rule applies to all storage vessels with greater than or equal to forty thousand (40,000) gallons that are used to store volatile organic liquid (VOL) with the following exceptions:

1. Except as specified in subsections (4)(E) and (4)(H) of this rule, storage vessels with a capacity greater than or equal to forty thousand (40,000) gallons storing a liquid with a maximum true vapor pressure less than one-half (0.5) psia are exempt from the provisions of this rule; and

2. Except as specified in subsections (4)(E) and (4)(H) of this rule, storage vessels with a design capacity less than forty thousand (40,000) gallons are exempt from the provisions of this rule.

(C) This rule does not apply to the following:

1. Vessels permanently attached to mobile vehicles such as trucks, railcars, barges or ships;

2. Vessels used to store beverage alcohol;

3. Pressure vessels designed to operate in excess of twenty-nine and four-tenths (29.4) psia and without emissions to the atmosphere;

4. Vessels at coke oven by-product plants; or

5. Vessels used only to store or transfer petroleum liquids and that are subject to the requirements of 10 CSR 10-5.220; and

6. Vessels used to store volatile organic liquids that are subject to or exempt from the requirements of 40 CFR 60, 61, or 63.

(2) Definitions.

(A) Beverage alcohol—Consumable products and their process intermediates and byproducts, consisting of ethanol or mixtures of ethanol and non-volatile organic liquids.

(B) Closed vent system - A system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary,

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flow inducing devices that transport gas or vapor from an emission point to a control device.

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

(D) Control device - An enclosed combustion device, vapor recovery system, or flare.

(E) Control equipment - Any equipment that reduces the quantity of a pollutant that is emitted to the air. The device may destroy or secure the pollutant for subsequent recovery. Includes, but is not limited to, incinerators, carbon adsorbers, and condensers.

(F) Department - The Missouri Department of Natural Resources, which includes the director thereof, or the person or division or program within the department delegated the authority to render the decision, order, determination, finding, or other action that is subject to review by the commission.

(G) Director - Director of the Missouri Department of Natural Resources or a representative designated to carry out the duties as described in 643.060, RSMo.

(H) External floating roof - A storage vessel cover in an open top tank consisting of a double deck or pontoon single deck which rests upon and is supported by petroleum liquid being contained and is equipped with a closure seal(s) to close the space between the roof edge and tank wall.

(I) Facility - All contiguous or adjoining property that is under common ownership or control, including properties that are separated only by a road or other public right-of-way.

(J) Federally enforceable - All limitations and conditions which are enforceable by the administrator, including those requirements developed pursuant to 40 CFR 55, 60, 61, and 63; requirements within any applicable state implementation plan; requirements in operating permits issued pursuant to 40 CFR 70 or 71, unless specifically designated as nonfederally enforceable; and any permit requirements established pursuant to 40 CFR 52.10, 52.21, or 55, or under regulations approved pursuant to 40 CFR 51, subpart I, including operating permits issued under a U.S. Environmental Protection Agency-approved program that is incorporated into the state implementation plan and expressly requires adherence to any permit issued under such program.

(K) Fill - The introduction of VOL into a storage vessel but not necessarily to complete capacity.

(L) Internal floating roof - A product cover in a fixed roof tank which rests upon or is floated upon the volatile organic compound liquid being contained and which is equipped with a sliding seal(s) to close the space between the edge of the covers and tank shell.

(M) Liquid-mounted seal-A foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(N) Maximum true vapor pressure - The equilibrium partial pressure exerted by the volatile organic compounds in the stored volatile organic liquid (VOL) at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOLs stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOLs stored at the ambient temperature, as determined -

1. In accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks (incorporated by reference in section (5));

2. As obtained from standard reference texts; or

3. As determined by ASTM D2879-83, 96, or 97 (incorporated by reference in section (5)).

(Section (2) (N) 4. is not included in the SIP.)

(O) Mechanical shoe seal-A metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(P) Petroleum - The crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(Q) Petroleum liquids - Petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

(R) Petroleum refinery - Any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, extracting, or reforming of unfinished petroleum derivatives.

(S) Reid vapor pressure - The absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquefied petroleum gases, as determined by ASTM D323-82 or 94 (incorporated by reference in section (5)).

(T) Rim seal - A device attached to the rim of a floating roof deck that spans the annular space between the deck and the wall of the storage vessel. When a floating roof has only one (1) such device, it is a primary seal; when there are two (2) seals (one (1) mounted to the other), the lower seal is the primary seal and the upper seal is the secondary seal.

(U) Standard conditions - A gas temperature of seventy degrees Fahrenheit (70 °F) and a gas pressure of fourteen and seven-tenths (14.7) pounds per square inch absolute (psia).

(V) Storage vessel - Any tank, reservoir, or container used for the storage of volatile organic liquids, but does not include:

1. Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors; or
2. Subsurface caverns or porous rock reservoirs.

(W) Vapor-mounted seal - A rim seal designed not to be in contact with the stored liquid. Vapor mounted seals may include, but are not limited to, resilient seals and flexible wiper seals.

(X) Vapor Recovery system - An individual unit or series of material recovery units, such as absorbers, condensers, and carbon adsorbers, used for recovering volatile organic compounds.

(Y) Volatile organic compound (VOC) - See definition in 10 CSR 10-6.020.

(Z) Volatile organic liquid (VOL) - Any substance which is a liquid at storage conditions containing one (1) or more volatile organic compounds.

(3) General Provisions.

(A) Every owner or operator storing VOL in a vessel of forty thousand (40,000) gallons or greater with a maximum true vapor pressure greater than or equal to one-half (0.5) psia but less than three-quarters (0.75) psia shall be subject to the record keeping requirements in subsection (4)(F) of this rule and the monitoring requirements in subsection (4)(G) of this rule. Furthermore, every

owner or operator storing VOL in a vessel of forty thousand (40,000) gallons or greater with a maximum true vapor pressure equal to three-quarters (0.75) psia but less than eleven and one tenth (11.1) psia shall reduce VOC emissions from storage vessels as follows:

1. Equip each fixed roof storage vessel with a vapor control system that meets the specifications contained in paragraph (3)(A)3. of this rule or an internal floating roof that meets the following specifications:

A. The internal floating roof shall rest or float on the liquid surface but not necessarily in complete contact with it inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied and subsequently refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and accomplished as rapidly as possible;

B. Each internal floating roof shall be equipped with one (1) of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

(I) A liquid-mounted seal;

(II) Two (2) seals mounted one (1) above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous; or

(III) A mechanical shoe seal;

C. Each opening in a non-contact internal floating roof except for automatic bleeder vents such as vacuum breaker vents and the rim space vents shall provide a projection below the liquid surface;

D. Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover or lid which is to be maintained in a closed position at all times with no visible gap except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use;

E. Automatic bleeder vents shall be equipped with a gasket and remain closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports;

F. Rim space vents shall be equipped with a gasket and set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting;

G. Each penetration of the internal floating roof for the purpose of sampling a sample well with a slit fabric cover that covers at least ninety percent (90%) of the opening; and

H. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover;

2. Each external floating roof storage vessel shall meet the following specifications:

A. Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device shall consist of two (2) seals, one (1) above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(I) Except as provided in subparagraph (3)(C)2.D. of this rule, the primary seal shall completely cover the annular space between the edge of the floating roof and storage vessel wall and shall be either a liquid-mounted seal or a mechanical shoe seal.

(II) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in subparagraph (3)(C)2.D. of this rule.

B. Except for automatic bleeder vents and rim space vents, each opening in a non-contact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal or lid that is to be maintained in a closed position at all times with no visible gap except when the device is in actual use. Automatic bleeder vents shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents shall be set open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents shall be gasketed. Each emergency roof drain shall include a slotted membrane

fabric cover that covers at least ninety percent (90%) of the area of the opening; and

C. The roof shall be floating off the roof leg supports on the liquid at all times except when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and accomplished as rapidly as possible;

3. Closed vent systems and control device respectively shall meet the following specifications:

A. The closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than five hundred parts per million (500 ppm) above background and visual inspections, as determined by the methods in 40 CFR 60.485(c), as specified in 10 CSR 10-6.070(3)(A)1.; and

B. The control device shall be designed and operated to reduce inlet VOC emissions by ninety percent (90%) or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements of 40 CFR 60.18, as specified in 10 CSR 10-6.070(3)(A)1.; or

4. An alternative emission control plan equivalent to the requirements of paragraphs (3)(A)1., (3)(A)2., or (3)(A)3. of this rule that has been approved by the department and the United States Environmental Protection Agency in a federally enforceable permit.

(B) The owner or operator of each storage vessel with a design capacity equal to or greater than forty thousand (40,000) gallons which contains VOL that, as stored, has a maximum true vapor pressure greater than or equal to eleven and one tenth (11.1) psia shall equip each storage vessel with a closed vent system and control device as specified in paragraph (3)(A)3. of this rule.

(C) Testing Requirements. The owner or operator of each storage vessel specified in section (1) of this rule shall comply with the requirements of paragraphs (3)(C)1., (3)(C)2. or (3)(C)3. of this rule. The applicable requirements for a particular storage vessel depends on the control equipment installed to meet the requirements of this rule.

1. After installing the control equipment necessary to comply with paragraph (3)(A)1. of this rule for permanently affixed roofs and internal floating roofs, each owner or operator shall-

A. Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one (1) is in service) prior to filling the storage vessel with VOL. If there are holes, tears or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, repair the items before filling the storage vessel;

B. For storage vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one (1) is in service) through manholes and roof hatches on the fixed roof at least once every twelve (12) months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or if there is liquid accumulated on the roof, or if the seal is detached, or if there are holes or tears in the seal fabric, repair the items or empty and remove the storage vessel from service within forty five (45) days. If a failure that is detected during inspections required in this rule subsection cannot be repaired within forty five (45) days and if the vessel cannot be emptied within forty five (45) days, the owner or operator may request a thirty (30) day extension from the department in the inspection report required in paragraph (4) (A)2. of this rule. Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the owner or operator will take that will assure that the control equipment will be repaired or the vessel will be emptied within thirty (30) days;

C. For storage vessels equipped with both primary and secondary seals-

(I) Visually inspect the storage vessel as specified in subparagraph (3) (C)1.D. of this rule at least every five (5) years; or

(II) Visually inspect the storage vessel as specified in subparagraph (3) (C)1.B. of this rule;

D. Visually inspect the internal floating roof, primary seal, secondary seal (if one (1) is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears or other openings in the seal, or if the seal fabric or the secondary seal has holes, tears or other openings in the seal, or if the seal fabric or the gaskets no longer close off the liquid surfaces from the atmosphere, or if the slotted membrane has more than ten percent (10%) open area, repair the items as necessary so that none of the conditions specified in this rule

subsection exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than ten (10) years in the case of storage vessels subject to the annual visual inspection as specified in subparagraph (3)(C)1.B. and part (3)(C)1.C.(II) of this rule and at intervals no greater than five (5) years in the case of vessels specified in part (3)(C)1.C.(I) of this rule; and

E. Notify the department in writing at least thirty (30) days prior to the filling or refilling of each storage vessel for which an inspection is conducted in accordance with subparagraphs (3)(C)1.A. and (3)(C)1.D. of this rule to afford the department the opportunity to have an observer present. If the inspection under subparagraph (3)(C)1.D. of this rule is not planned and the owner or operator could not have known about the inspection thirty (30) days in advance of refilling the storage vessel, notify the department at least seven (7) days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the department at least seven (7) days prior to the refilling.

2. The owner or operator of external floating roof storage vessels shall—

A. Determine the gap areas and maximum gap widths between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel.

(I) Perform measurements of gaps between the storage vessel wall and the primary seal (seal gaps) during the hydrostatic testing of the storage vessel or within sixty (60) days after the initial fill with VOL and at least once every five (5) years thereafter.

(II) Perform measurements of gaps between the storage vessel wall and the secondary seal within sixty (60) days after the initial fill with VOL and at least once per year thereafter.

(III) If any source ceases to store VOL for a period of one (1) year or more, subsequent introduction of VOL into the storage vessel shall be considered an initial fill for the purposes of parts (3)(C)2.A.(I) and (3)(C)2.A.(II) of this rule;

B. Determine gap widths and areas in the primary and secondary seals individually according to the following procedures:

(I) Measure seal gaps, if any, at one (1) or more floating roof levels when the roof is floating off the roof leg supports;

(II) Measure seal gaps around the entire circumference of the storage vessel in each place where a one-eighth inch (1/8") in diameter uniform probe passes freely without forcing or binding against seal between the seal and the wall of the storage vessel and measure the circumferential distance of each such location; and

(III) Determine the total surface area of each gap described in part (3)(C)2.B.(II) of this rule by using probes of various widths to measure accurately the actual distance from the storage vessel wall to the seal and multiplying each such width by its respective circumferential distance;

C. Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each by the nominal diameter of the storage vessel and compare each ratio to the respective standards in subparagraph (3)(C)2.D. of this rule;

D. Make necessary repairs or empty the storage vessel within forty-five (45) days after identification in any inspection for seals not meeting the requirements listed in parts (3)(C)2.D.(I) and (3)(C)2.D.(II) of this rule.

(I) The accumulated area of gaps between the storage vessel wall and the mechanical shoe or liquid-mounted primary seal shall not exceed one inch (1.0") per foot of tank diameter, and the width of any portion of any gap shall not exceed one and one-half inches (1.5"). There shall be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(II) The secondary seal shall meet the following requirements:

(a) Be installed above the primary seal so that it completely covers the space between the roof edge and the storage vessel wall except as provided in part (3)(C)2.B.(III) of this rule;

(b) The accumulated area of gaps between the storage vessel wall and the secondary seal used in combination with a metallic shoe or liquid-mounted primary seal shall not exceed one inch (1.0") per foot of storage vessel diameter, and the width of any portion of any gap shall not exceed one-half inch (0.5"). There shall be no gaps between the storage vessel wall and the secondary seal when used in combination with vapor mounted primary seal; and

(c) There shall be no holes, tears or other openings in the seal or seal fabric.

(III) If a failure that is detected during inspections required in subparagraph (3)(C)2.A. of this rule cannot be repaired within forty five (45) days and if the storage vessel cannot be emptied within forty five (45) days, the owner or operator may request a thirty (30) day extension from the department in the inspection report required in subparagraph (3)(C)2.D. of this rule. Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the storage vessel will be emptied as soon as possible;

E. Notify the department thirty (30) days in advance of any gap measurements required by subparagraph (3)(C)2.A. of this rule to afford the department the opportunity to have an observer present; and

F. Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

(I) If the external floating roof has defects, if the primary seal has holes, tears or other openings in the seal or the seal fabric, or if the secondary seal has holes, tears, or other openings in the seal or the seal fabric, repair the items as necessary so that none of the conditions specified in this rule subsection exist before filling or refilling the storage vessel with VOL.

(II) For all the inspections required by subparagraph (3)(C)2.F. of this rule, the owner or operator shall notify the department in writing at least thirty (30) days prior to the filling or refilling of each storage vessel to afford the department the opportunity to inspect the storage vessel prior to refilling. If the inspection under subparagraph (3)(C)2.F. of this rule is not planned and the owner or operator could not have known about the inspection thirty (30) days in advance of refilling the storage vessel, notify the department at least seven (7) days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be sent by express mail so that it is received by the department at least seven (7) days prior to the refilling.

3. The owner or operator of each storage vessel that is equipped with a closed vent system and a flare to meet the requirements of

paragraph (3)(A)3. of this rule shall meet the requirements specified in the general control device requirements of 40 CFR 60.18(e) and (f), as specified in 10 CSR 10-6.070(3)(A)1.

(4) Reporting and Record Keeping.

(A) After installing control equipment in accordance with paragraph (3)(A)1. of this rule for fixed roofs and internal floating roofs, the owner or operator shall—

1. Keep a record of each inspection performed as required by subparagraphs (3)(C)1.A., (3)(C)1.B, (3)(C)1.C, and (3)(C)1.D. of this rule. Each record shall identify the storage vessel on which the inspection was performed, contain the date the storage vessel was inspected, and the observed condition of each component of the control equipment including seals, internal floating, and fittings;

2. If any of the conditions described in subparagraph (3)(C)1.B. of this rule are detected during the annual visual inspection, report to the department within twenty (20) days after the inspection the identity of the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made; and

3. After each inspection required by subparagraph (3)(C)1.C. of this rule where tears or holes in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in part (3)(C)1.C.(II) of this rule are discovered, report to the department within twenty (20) days after the inspection the identity of the storage vessel and the reason it did not meet the specifications of paragraph (3)(A)1. or (3)(C)1. of this rule, and list each repair made.

(B) After installing control equipment in accordance with paragraph (3)(A)2. of this rule for external floating roofs, the owner or operator shall—

1. Within sixty (60) days after performing the seal gap measurements required by subparagraphs (3)(C)2.A. of this rule, furnish the department with a report that contains the date of measurement, the raw data obtained in the measurement, the raw data obtained in the measurement, and the calculations of this rule described in subparagraphs (3)(C)2.B. and (3)(C)2.C. of this rule;

2. Maintain records of each gap measurement performed under by subparagraph (3)(C)2.B. of this rule. Such records shall identify the storage vessel in which the measurement was performed and shall contain the date of measurement, the raw data obtained in the

measurement, and the calculations of this rule described in subparagraphs (3)(C)2.B. and (3)(C)2.C. of this rule; and

3. After each seal gap measurement that detects gaps exceeding the limitations specified by subparagraph (3)(C)2.D. of this rule, submit a report to the department within twenty (20) days after the inspection identifying the storage vessel and containing the information specified in paragraph (4)(B)1. of this rule and the date the storage vessel was emptied or the repairs were made and the date of the repair.

(C) After installing control equipment to comply with subsection (3)(C) of this rule for closed vent systems and control device other than a flare, the owner or operator shall maintain a record of the measured values of the parameters monitored in accordance with the requirements of this rule.

(D) After installing a closed vent system and flare to comply with subsection (3)(C) of this rule, the owner or operator shall—

1. Provide the department with a report containing the measurements recorded under paragraph (3)(C)3. of this rule within six (6) months after the initial start-up date;

2. Maintain records of all periods of operation during which the flare pilot flame is absent; and

3. Report semiannually all periods recorded under paragraph (4)(D)2. of this rule in which the pilot flame was absent.

(E) The owner or operator of each storage vessel specified in section (1) of this rule shall maintain readily accessible records of the dimensions of the storage vessel and an analysis of the capacity of the storage vessel.

(F) Except as provided in paragraphs (4)(G)3. and (4)(G) 4. of this rule, the owner or operator of each storage vessel subject to the requirements in subsection (3)(A) or (3)(B) of this rule with a design capacity greater than or equal to forty thousand (40,000) gallons storing a liquid with a maximum true vapor pressure greater than or equal to one-half (0.5) psia but less than three-quarters (0.75) psia shall maintain a record of the VOL storage, the period of storage, and the maximum true vapor pressure of the VOL during the respective storage period.

(G) Monitoring Requirements.

1. Except as provided in paragraph (4)(G)4. of this rule, the owner or operator of each storage vessel with a design capacity greater than or equal to forty thousand (40,000) gallons storing a liquid with a maximum true vapor pressure that is normally less than three-quarters (0.75) psia shall notify the department within thirty (30) days when the maximum true vapor pressure of the liquid exceeds three-quarters (0.75) psia.

2. Available data on the storage temperature may be used to determine the maximum true vapor pressure.

A. For storage vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For storage vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

B. For other liquids, the vapor pressure shall be determined by an appropriate test method in section (5) of this rule or calculated by an appropriate method approved by the department.

3. The owner or operator of each storage vessel storing a mixture of indeterminate or variable composition shall be subject to the following:

A. Prior to the initial filling of the storage vessel, the maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in paragraph (4)(G)2. of this rule; and

B. For storage vessels in which the vapor pressure of the anticipated liquid composition is one-half (0.5) psia or greater but less than three-quarters (0.75) psia, perform an initial physical test of the vapor pressure; a physical test at least once every six (6) months thereafter is required as determined by an appropriate test method in section (5) of this rule.

4. The owner or operator of each storage vessel equipped with a closed vent system and control device meeting the specifications of subsection (3)(A) or (3)(B) of this rule is exempt from the requirements of paragraphs (4)(G)1. and (4)(G)2. of this rule.

(H) The owner or operator shall maintain all records required by this rule section, except for those records described in subsection (4)(E) of this rule, on-site for at least five (5) years. The records described in subsection (4)(E) of this rule shall be kept on-site for

the life of the source. The records required by this rule shall be made available to the department immediately upon request.

(5) Test Methods.

(A) American Petroleum Institute (API) Bulletin 2517, *Evaporation Loss From External Floating Roof Tanks, Second Edition*, as published by API, February 1980. This publication is hereby incorporated by reference in this rule. Copies can be obtained from API, 1220 L Street NW, Washington DC 20005. This rule does not incorporate any subsequent amendments or additions.

(B) The following documents are published by the American Society for Testing Materials (ASTM) and incorporated by reference in this rule. Copies can be obtained from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. This rule does not incorporate any subsequent amendments or additions:

1. ASTM D323-82 or 94 Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method); and

2. ASTM D2879-83, 96, or 97 Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope;

(C) The following ATSMs as specified in 10 CSR 10-6.040(36):

1. ASTM D4953 Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method); and

2. ASTM D5191 Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method);

(D) The following test methods as specified in 10 CSR 10-6.030(22):

1. Test Methods 1 and 2 (40 CFR 60, Appendix A) for determining flow rates, as necessary;

2. Test Method 18 (40 CFR 60, Appendix A) for determining gaseous organic compound emissions by gas chromatography;

3. Test Method 21 (40 CFR 60, Appendix A) for determination of volatile organic compound leaks;

4. Test Method 22 (40 CFR 60, Appendix A) for visual determination of fugitive emissions from material sources and smoke emissions from flares;

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5. Test Method 25 (40 CFR 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon; and

6. Test Methods 25A or 25B (40 CFR 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis;

(E) Test method described in 40 CFR 60.113(a)(ii) as specified in 10 CSR 10-6.070(3)(A)1. for measurement of storage tank seal gap;

(F) Other test methods for determining compliance may be used if found to be equivalent after review by the department.

EPA Rulemakings

CFR: 40 C.F.R. 52.1320(c)
 FRM: 88 C.F.R. 68469 (10/4/2023)
 PRM: 88 C.F.R. 57018 (8/22/2023)
 State Submission: 2/15/19 and 6/10/21
 State Final: 10 C.S.R. 10-5 (6/30/2020); effective 7/30/2020
 APDB File: MO-406 and MO-452; EPA-R07-OAR-2023-0403
 Description: The revisions to this rule add incorporations by reference to other state rules, add definitions specific to the rule, revise unnecessarily restrictive or duplicative language, and make administrative wording changes.

CFR: 40 C.F.R. 52.1320(c)
 FRM: 65 C.F.R. 31489 (5/18/2000)
 PRM: 65 C.F.R. 8094 (2/17/2000)
 State Submission: 10/10/99
 State Final: 10 C.S.R. 10-5 (2/29/00)
 APDB File: MO-130
 Description: This new rule establishes emission standards for all installations storing large volumes of volatile organic liquids in the St. Louis nonattainment area.

Difference Between the State and EPA-Approved Regulation

Section (2) (N)4 is not SIP-approved. Section (5) (F) retains a previously approved version of the state rule text.