REGULATION 8
ORGANIC COMPOUNDS
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STORAGE OF ORGANIC LIQUIDS

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(Adopted January 1, 1978)

8-5-100 GENERAL

8-5-101 Description: The purpose of this Rule is to limit emissions of organic compounds from storage tanks.

Note: New storage tanks may also be subject to Regulation 10 and storage tanks located at bulk plants may also be subject to the requirements of Regulation 8, Rule 6 or Rule 33.

(Amended 9/4/85; 5/4/88; 1/20/93)

8-5-110 Exemptions: This Rule does not apply to emissions from the following sources:

110.1 ~~Stationary s~~Storage tanks having a capacity of less than 1.0 m^3 (264 gal).

110.2 Any ~~stationary~~ storage tank installed prior to January 4, 1967, which is not used for storage of gasoline to be dispensed to internal combustion engine fuel tanks, and is either of a capacity of less than 7.6 m^3 (2,008 gal), or an underground tank with ~~an offset fill line~~a submerged fill pipe.

110.3 Any above ground gasoline tank of 7.6 m^3 (2,008 gal) or less capacity installed and in service prior to January 9, 1976, and equipped with a submerged fill pipe. (Amended 5/4/88; 1/20/93)

8-5-111 Limited Exemption, Tank Removal From and Return to Service: The requirements of Sections 8-5-~~311~~304, 305, 306, 307 and 320 shall not apply to storage tanks during or after tank decommissioning, and shall not apply during ~~tank cleaning, stock change, tank and roof repairs or removal of contaminated stock, decommissioning or~~ temporary removal from service provided that the following is accomplished:

111.1 The operator provides notice to the APCO. This notification shall identify the specific requirement for which an exemption is necessary and explain how the planned or performed activities necessarily prevent compliance with those requirements. The notification requirement may be satisfied in any one of the following ways:

1.1 Three days prior to such work being done, written notice is received by the APCO;

1.2 Telephone notification is made to the APCO,~~or prior to such work being done, approval is granted by the APCO during District working hours~~ and written notice is received by the APCO within three days after such work has been done~~; or outside of District working hours, prior to such work being done, the APCO is notified and written notice is received by the APCO within three days after such work has been done~~.

111.2 The tank is in compliance prior to notification. The written notice shall contain a statement that, to the best knowledge of the person providing notification, the tank is in compliance, and the basis for that knowledge.

111.3 When the floating roof is resting on the leg supports, the process of filling, emptying, and refilling shall be continuous and shall be accomplished as rapidly as possible.

111.4 Vapor recovery shall be used on tanks so equipped during filling and emptying procedures.

111.5 Emissions shall be minimized during the period of exemption. As much product as possible shall be drained before any hatches are opened, and tank degassing equipment and an associated emission control system shall be connected and operating as soon as possible.

111.6 Written notice is not required when returning a tank to service after the above listed work has been completed.

111.7 The requirements of Section~~s~~ 8-5-328~~ and 329~~ are satisfied.

(Amended 1/20/93; 12/15/99)

8-5-112 **Limited Exemption, Tanks in Operation:** The requirements of Sections 8-5-~~311~~304, 305, 306, 307 and 8-5-320 shall not apply to storage tanks during preventative maintenance of a vapor control device, tank roof, roof fitting ~~repair~~ or tank seal~~,~~; during primary seal inspection~~,~~; or during removal and installation of a secondary seal if the following is accomplished~~conditions are met~~:

112.1 The operator shall provide notification to the APCO. This notification shall identify the specific requirement for which an exemption is necessary and explain how the planned or performed activities necessarily prevent compliance with those requirements, and shall describe the measures to be taken to minimize emissions. The notification requirement may be satisfied in any one of the following ways:

1.1 Three days prior to such work being done, written notice is received by the APCO;

1.2 Telephone notification is made to the APCO, and written notice is received by the APCO within three days after such work has been done.

112.2~~1~~ The tank is in compliance with all District Regulations prior to the commencement of the work and is certified in accordance with Section 8-5-404.

112.3~~2~~ Product shall be moved neither in nor out of the storage tank and emissions shall be minimized.

112.4~~3~~ The time of exemption, allowed under this section, does not exceed 7 days.

112.5~~4~~ For any secondary seal replacement, the operator shall submit written notification to the APCO at least seven days prior to the installation.

(Adopted 9/4/85; Amended 5/4/88; 1/20/93; 12/15/99)

8-5-113 **Deleted May 4, 1988**

8-5-114 **Deleted May 4, 1988**

8-5-115 **Deleted May 4, 1988**

8-5-116 **Exemption, Gasoline Storage Tanks at Gasoline Dispensing Facilities:** The provisions of this Rule shall not apply to any underground gasoline storage tank located at a gasoline dispensing facility subject to the requirements of Regulation 8, Rule 7. (Adopted January 20, 1993)

8-5-117 **Exemption, Low Vapor Pressure:** The provisions of this Rule shall not apply to tanks storing organic liquids with a true vapor pressure of less than or equal to 25.8 mm Hg (0.5 psia) as determined by Sections 8-5-602 or 604.

(Adopted January 20, 1993)

8-5-200 **DEFINITIONS**

8-5-201 **Abatement Efficiency:** A comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor loss control system, expressed as a percentage. Base line emissions shall be calculated using the criteria in API Bulletin 2518. (Amended January 20, 1993)

8-5-202 **Storage Tank:** Any ~~stationary~~ container, reservoir, or tank used for the storage of organic liquids, excluding tanks which are permanently affixed to mobile vehicles such as railroad tank cars, tanker trucks or ocean vessels.

(Adopted September 4, 1985)

~~**8-5-203** **Submerged Fill Pipe:** Any discharge pipe or nozzle which meets either of the following conditions:~~

~~203.1 Where the tank is filled from the top, the end of the discharge pipe or nozzle must be totally submerged when the liquid level is 15 cm (6 in.) from the bottom of the tank.~~

~~203.2 Where the tank is filled from the side, the discharge pipe or nozzle must be totally submerged when the liquid level is 46 cm (18 in.) from the bottom of the tank. (Adopted September 4, 1985)~~

8-5-204 **Organic Liquid:** Any organic compound that exists as a liquid at actual conditions of use or storage. (Adopted 9/4/85; Amended 1/20/93)

8-5-205 **Gasoline:** Petroleum distillates used as motor fuel with a Reid vapor pressure greater than 4.0 psia. (Adopted 9/4/85; Amended 5/4/88)

8-5-206 **Gas Tight:** A concentration of organic compounds, measured 1 cm or less from any source, of less than 100~~10,000~~ ppm (expressed as methane) above background. (Adopted 5/4/88; Amended 1/20/93)

8-5-207 **Approved Emission Control System:** A system for reducing emissions to the atmosphere that consists of a collection system and a control device, which is approved in writing by the APCO and achieves the overall abatement efficiency specified in the applicable standards section. (Adopted January 20, 1993)

8-5-208 **Degassing:** The process of removing organic gases from a tank. (Adopted January 20, 1993)

8-5-209 **External Floating Roof Tank:** An open top tank with a storage vessel cover consisting of a double deck or pontoon single deck which rests upon and is supported by the liquid being contained. (Adopted January 20, 1993)

8-5-210 **Internal Floating Roof Tank:** A fixed roof tank with a cover or roof which rests upon or is floated upon the liquid being contained. (Adopted January 20, 1993)

8-5-211 **True Vapor Pressure:** The vapor pressure of a liquid at storage temperature. (Adopted January 20, 1993)

8-5-212 **Organic Compound:** Any compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates and ammonium carbonate. (Adopted January 20, 1993)

8-5-213 **Viewport:** An accessible opening in the fixed roof of an internal floating roof tank that measures at least 0.75 meters (30 inches) on each side or at least 0.75 meters (30 inches) in diameter. (Adopted January 20, 1993)

8-5-214 **Gauge Float**: A device to indicate the level of liquid within a tank. The float rests on the liquid surface inside a well in the tank. (Adopted December 15, 1999)

8-5-215 **Guidepole:** An anti-rotation device that is fixed to the top and bottom of a tank, passing through a well in a floating roof. Guidepoles may be solid or be equipped with slots or holes for gauging purposes. (Adopted December 15, 1999)

8-5-216 **Zero Gap Pole Wiper Seal:** A seal with no gap exceeding 0.06 inches between the guidepole or gauge well and pole wiper seal. (Adopted December 15, 1999)

8-5-217 **Decommissioning:** The removal of all organic liquid and gases from a storage tank with the intent of no longer using the tank for storage of organic liquids or gases.

8-5-218 **Stock Change:** The removal of organic liquids from a tank prior to refilling the tank with a different organic liquid.

8-5-219 **Tank Cleaning:** The process of washing or rinsing the interior of a storage tank or removing vapor, sludge, or rinsing liquid from a storage tank.

8-5-220 **Temporary Removal From Service:** The removal of organic liquid from a storage tank for tank cleaning, stock change, tank repair, roof repair, or removal of contaminated stock, followed by return to service.

8-5-300 STANDARDS

~~**8-5-301 Storage Tanks Smaller than 150m^3 or less:** A person shall not store organic liquid with a true vapor pressure of greater than 25.8 mm Hg (0.5 psia) in any storage tank less than or equal to 150 m^3 (39,626 gal) capacity unless such tank is equipped with one of the following:~~

~~301.1 A submerged fill pipe.~~

~~301.2 An apparatus of equal efficiency to a submerged fill pipe which has been approved by the APCO.~~

~~301.3 A vapor loss control device which complies with the requirements set forth in Section 8-5-311.~~

~~(Amended 9/4/85; 5/4/88; 1/20/93)~~

~~**8-5-302 Above Ground Gasoline Storage Tanks Smaller than 75 m^3:** A person shall not store gasoline in any above ground storage tank of 75 m^3 (19,813 gal) or less capacity unless such tank is equipped with a pressure-vacuum valve which is set to either a pressure within 10% of the maximum allowable working pressure of the tank~~

~~or at least 25.8 mm Hg (0.5 psig) pressure or is equipped with a vapor loss control device which complies with the requirements set forth in Section 8-5-311.~~

~~(Amended 9/4/85; 5/4/88; 1/20/93; 12/15/99)~~

~~**8-5-303 Above Ground Storage Tanks Larger than 37.5 m^3 and Smaller than 75 m^3:** A person shall not store any organic liquid with a true vapor pressure greater than 77.5 mm Hg (1.5 psia) in any above ground storage tank with a capacity greater than 37.5 m^3 (9,906 gal) and less than 75 m^3 (19,813 gal) unless such tank is equipped with a pressure-vacuum valve which is set to either a pressure within 10% of the maximum allowable working pressure of the tank or at least 25.8 mm Hg (0.5 psig) pressure or is equipped with a vapor loss control device which complies with the requirements set forth in Section 8-5-311. (Adopted 9/4/85; Amended 5/4/88; 1/20/93)~~

~~**8-5-304 Storage Tanks Larger than 75 m^3:** A person shall not store organic liquid in any storage tank with a capacity greater than 75 m^3 (19,813 gal) unless such tank meets the following conditions:~~

~~304.1 Storage tanks with a capacity greater than 75 m^3 (19,813 gal) but less than 150 m^3 (39,626 gal) storing an organic liquid with a true vapor pressure greater than 77.5 mm Hg (1.5 psia) must meet the requirements of Section 8-5-311.~~

~~304.2 Storage tanks with a capacity of 150 m^3 (39,626 gal) or greater storing an organic liquid with a true vapor pressure greater than 25.8 mm Hg (0.5 psia) must meet the requirements of Section 8-5-311.~~

~~(Amended, Renumbered 9/4/85; Amended 5/4/88; 1/20/93)~~

~~**8-5-305 Storage Tanks Storing Organic Liquids with a True Vapor Pressure Greater than 11 psia:** A person shall not store organic liquid with a true vapor pressure of 569 mm Hg (11 psia) or greater under storage conditions in any storage tank unless such tank is a pressure tank maintaining working pressures sufficient at all times to prevent organic vapor or gas loss to the atmosphere, or designed and equipped with a vapor loss control device which meets the requirements of Section 8-5-311.3.~~

~~(Adopted 9/4/85; Amended 5/4/88; 1/20/93)~~

8-5-301 Storage Tank Control Requirements: A person shall not store organic liquid in any storage tank unless such tank is equipped with a vapor loss control device that is (1) specified by the table below for the tank capacity, or for a higher capacity, and for the true vapor pressure of the tank organic liquid contents, or for a higher true vapor pressure; and (2) complies with the applicable requirements of Sections 8-5-302 through 307.

Tank Capacity	True Vapor Pressure of Tank Organic Liquid Contents		
	>0.5 to ≤1.5 psia	>1.5 to <11 psia	≥ 11 psia
≥1.0 m^3 to ≤37.5 m^3 (≥264 gallons to ≤9,906 gallons), aboveground only	Submerged fill pipe, internal floating roof, external floating roof, or approved emission control system	Pressure vacuum valve, internal floating roof, external floating roof, or approved emission control system	Pressure tank or approved emission control system
>37.5 m^3 to <75 m^3 (>9,906 gallons to <19,803 gallons), aboveground only	Submerged fill pipe, internal floating roof, external floating roof, or approved emission control system	Pressure vacuum valve, internal floating roof, external floating roof, or approved emission control system	Pressure tank or approved emission control system
≥75 m^3 to <150 m^3 (≥19,803 gallons to <39,626 gallons)	Submerged fill pipe, internal floating roof, external floating roof, or approved emission control system	Internal floating roof, external floating roof, or approved emission control system	Pressure tank or approved emission control system

≥150 m^3 (≥39,626 gallons)	Internal floating roof, external floating roof, or approved emission control system	Internal floating roof, external floating roof, or approved emission control system	Pressure tank or approved emission control system

8-5-302 Requirements for Submerged Fill Pipes: A submerged fill pipe must meet either of the following requirements:

302.1 Where the tank is filled from the top, the end of the discharge pipe or nozzle must be totally submerged when the liquid level is 15 cm (6 in.) from the bottom of the tank.

302.2 Where the tank is filled from the side, the discharge pipe or nozzle must be totally submerged when the liquid level is 46 cm (18 in.) from the bottom of the tank.

8-5-303 Requirements for Pressure Vacuum Valves: A pressure vacuum valve must meet the following requirements:

303.1 The pressure vacuum valve must be set to the lesser of a pressure within 10% of the maximum allowable working pressure of the tank, or 25.8 mm Hg (0.5 psig) pressure.

303.2 The pressure vacuum valve must be properly installed, properly maintained, and in good operating order; and must remain in a gas tight condition except when operating pressure exceeds the valve set pressure.

8-5-304 Requirements for External Floating Roofs: An external floating roof must be equipped tank fittings that meet the requirements of Section 8-5-320, a primary seal that meets the requirements of Section 8-5-321, and a secondary seal that meets the requirements of Section 8-5-322.

8-5-305 Requirements for Internal Floating Roofs: An internal floating roof must meet the following requirements:

305.1 For a tank with seals installed on or before February 1, 1993, the tank must be equipped with one of the following:

1.1 A liquid mounted primary seal, mounted in full contact with the liquid in the annular space between the tank shell and floating roof

1.2 A metallic shoe primary seal

1.3 A vapor mounted primary and a secondary seal

After February 1, 1993, if sections of seal with a total length equal or greater to the diameter of the tank are replaced at one time, or if sections of seal with a total cumulative length equal or greater to 50% of the total seal circumference are replaced, then the seal shall be considered to be newly installed and subject to Section 305.2.

305.2 For a tank with seals installed after February 1, 1993, the tank must be equipped with a liquid mounted or metallic shoe primary seal that meets the requirements of Section 8-5-321 and a secondary seal that meets the requirements of Section 8-5-322.

305.3 Internal floating roof tanks shall maintain a concentration of organic vapors in the vapor space above the internal roof that does not exceed 30 percent of the lower explosive limit (LEL) for the vapors, as determined by an explosimeter.

305.4 Internal floating roof tanks which are placed into service or de-gassed after February 1, 1993 shall be equipped with at least 3 viewing ports in the fixed roof of the tank.

305.5 Internal floating roof tanks must be equipped with tank fittings that meet the requirements of Section 8-5-320.

8-5-306 Requirements for Emission Control Systems: An Approved Emission Control System must be gas tight and have an abatement efficiency of at least 95% by weight.

8-5-307 Requirements for Pressure Tanks: A pressure tank must be maintained in a gas tight condition and must maintain working pressures sufficient at all times to prevent organic vapor or gas loss to the atmosphere.

8-5-310 Deleted May 4, 1988

8-5-311 ~~**Vapor Loss Control Device Requirements:** The vapor loss control device shall be one of the following:~~

~~311.1 An external floating roof equipped with a primary and secondary seal which meet the requirements of Section 8-5-321 and 322.~~

~~311.2 An internal floating roof which satisfies one of the following conditions:~~

~~2.1 A liquid mounted primary seal, mounted in full contact with the liquid in the annular space between the tank shell and floating roof; or~~

~~2.2 A vapor mounted primary and a secondary seal; or~~

~~2.3 A liquid mounted primary and a secondary seal which satisfies the requirements of Sections 8-5-321 and 322, if the seals were installed after February 1, 1993.~~

~~311.3 An Approved Emission Control System which collects and processes all organic vapors and gases and has an abatement efficiency of at least 95% by weight. (Amended January 20, 1993)~~

8-5-312 Deleted January 20, 1993

8-5-313 Deleted January 20, 1993

8-5-314 Deleted January 20, 1993

8-5-320 Tank Fitting Requirements: The fittings on any floating roof storage tank subject to Section 8-5-304 or 305~~311~~ shall meet the following conditions:

320.1 Deleted~~Any secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal.~~

320.2 All openings through the floating~~in the~~ roof, except pressure-vacuum valves and vacuum breaker vents, shall ~~meet the following conditions:~~

~~2.1 The opening shall~~ provide a projection below the liquid surface to prevent belching of liquid and reduce escaping organic vapors.

320.3 All openings through the floating roof

~~2.2 The viewports and other openings~~, except floating roof legs, shall be equipped with a gasketed cover, seal or lid, which shall at all times be in a closed position and shall meet either of the following requirements, as applicable, except as provided in Section 320.4, 320.5 or 320.6.

3.1 The gasketed cover, seal or lid shall have~~with~~ no measurable gap exceeding 0.32 cm (1/8 in.), except when the opening is in use. ~~Effective June 1, 1993, viewports and other openings, except floating roof legs, shall be equipped with a gasketed cover, seal or lid.~~

~~2.~~3.2 For inaccessible openings on internal floating roof tanks, there shall be no visible gaps as viewed from the fixed roof manway or viewports, except when the opening is in use.

~~320.3 Pressure-vacuum valves shall be set to within 10% of the maximum allowable working pressure of the roof or at least 25.8 mm Hg (0.5 psig), and shall be properly installed, properly maintained, and in good operating order; and shall remain in a gas tight condition except when operating pressure exceeds the valve set pressure.~~

320.4 Solid sampling or gauging wells, and similar fixed projections through a floating roof such as an anti-rotational pipe, shall meet the following conditions:

4.1 The well shall provide a projection below the liquid surface.

4.2 The well shall be equipped with a cover, seal or lid, which shall at all times be in a closed position with no gap exceeding 0.32 cm (1/8 in.), except when the well is in use.

4.3 The gap between the well and the roof shall be added to the gaps measured to determine compliance of the secondary seal and in no case shall exceed 1.3 cm (1/2 in.).

320.5 Slotted sampling or gauging wells shall meet the following conditions:

5.1 The well shall provide a projection below the liquid surface.

5.2 ~~Effective June 1, 2000, t~~The well ~~on an external floating roof~~ shall be equipped with the following: a sliding cover, a cover~~well~~ gasket, a pole sleeve, pole wiper and an internal float and float wiper designed to minimize the gap between the float and the well, provided that the gap shall in no case exceed 1/2 in., or shall be equipped with a well gasket,

a zero gap pole wiper seal and a pole sleeve that projects below the liquid surface.

5.3 The gap between the well and the roof shall be added to the gaps measured to determine compliance of the secondary seal and in no case shall exceed 1.3 cm (1/2 in.).

320.6 Any emergency roof drain shall be provided with a slotted membrane fabric cover, or equivalent, that covers at least 90% of the area of the opening.

(Amended 9/4/85; 5/4/88; 1/20/93; 12/15/99)

8-5-321 Primary Seal Requirements: A person shall not operate a storage tank equipped with a primary seal subject to the requirements of Section 8-5-304 or 305~~311~~ unless such tank meets the following conditions:

321.1 There shall be no holes, tears, or other openings in the primary seal fabric which allow the emission of organic vapors.

321.2 The seal shall be either a metallic shoe or a liquid mounted type, except as provided in subsection 8-5-305.1.3~~311.2.2~~.

321.3 Metallic-shoe-type seals shall be installed so that one end of the shoe extends into the stored liquid and the other end extends a minimum vertical distance of 61 cm (24 in.) for external floating roofs and 18 inches for internal floating roofs above the stored liquid surface.

3.1 The geometry of the shoe shall be such that the maximum gap between the shoe and the tank shell is no greater than double the gap allowed by the seal gap criteria for a length of at least 46 cm (18 in.) in the vertical plane above the liquid surface.

3.2 For welded tanks and riveted external floating roof tanks, no gap between the tank shell and the primary seal shall exceed 3.8 cm (1-1/2 in.). No continuous gap greater than 0.32 cm (1/8 in.) shall exceed 10% of the circumference of the tank. The cumulative length of all primary seal gaps exceeding 1.3 cm (1/2 in.) shall be not more than 10% of the circumference, and the cumulative length of all primary seal gaps exceeding 0.32 cm (1/8 in.) shall be not more than 40% of the circumference.

3.3 Until 6/1/06, f~~F~~or riveted internal floating roof tanks, no gap between the tank shell and the primary seal shall exceed 6.4 cm (2-1/2 in.). The cumulative length of all primary seal gaps exceeding 3.8 cm (1-1/2 in.) shall be not more than 10% of the circumference. After 6/1/06, riveted internal floating roof tanks shall be subject to the requirements of Section 321.3.2.

321.4 For resilient-toroid ~~seal~~ liquid-mounted seals~~equipped tanks~~, no gap between the tank shell and the primary seal shall exceed 1.3 cm (1/2 in.). The cumulative length of all gaps exceeding 0.32 cm (1/8 in.) shall be not more than 5% of the circumference. (Amended 1/20/93; 12/15/99)

8-5-322 Secondary Seal Requirements: A person shall not operate a storage tank equipped with a secondary seal subject to the requirements of Section 8-5-304 or 305~~311~~, unless such tank meets the following conditions:

322.1 There shall be no holes, tears, or other openings in the secondary seal fabric which allow the emission of organic vapors.

322.2 The secondary seal shall allow easy insertion of probes up to 3.8 cm (1-1/2 in.) in width in order to measure gaps in the primary seal.

322.3 ~~For welded tanks, n~~No gap between the tank shell and the secondary seal shall exceed 1.3 cm (1/2 in.). The cumulative length of all secondary seal gaps exceeding 0.32 cm (1/8 in.) shall be not more than 5% of the circumference of the tank.

~~322.4 For riveted tanks, the secondary seal shall consist of at least two sealing surfaces, such that the sealing surfaces prevent the emission of organic compounds around the rivets. Serrated sealing surfaces are allowable if the length of serration does not exceed 15.2 cm (6 in.) No gap between the tank shell and the secondary seal shall exceed 1.3 cm (1/2 in.). The cumulative length of all secondary seal gaps exceeding 0.32 cm (1/8 in.) shall be not more than 5% of the circumference.~~

322.4 The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal.

322.5 For ~~welded~~ external floating roof tanks with seals installed after September 4, 1985 or ~~welded~~ internal floating roof tanks with seals installed after February 1, 1993, no gap between the tank shell and the secondary seal shall exceed 1.5 mm (0.06 in.). The cumulative length of all secondary seal gaps exceeding 0.5 mm (0.02 in.) shall be not more than 5% of the circumference of the tank excluding gaps less than 5 cm (1.79 in.) from vertical weld seams. If sections of seal with a total length equal or greater to the diameter of the tank are replaced at one time, or if sections of seal with a total cumulative length equal or greater to 50% of the total seal circumference are replaced, then the seal shall be considered to be newly installed for the purpose of this section. (Amended January 20, 1993)

8-5-323 Deleted January 20, 1993

8-5-324 Deleted January 20, 1993

8-5-325 Deleted January 20, 1993

8-5-326 Deleted May 4, 1988

8-5-327 Deleted May 4, 1988

8-5-328 Tank Degassing~~Cleaning~~ Requirements:

328.1 Effective June 1, 1993, for tanks larger than 75 m^3, the emissions of organic compounds resulting from degassing ~~a tank subject to the requirements of Section 8-5-304~~ shall be controlled by one of the following methods:

1.1 Liquid Balancing in which the resulting organic liquid has a true vapor pressure less than 0.5 psia.

1.2 An Approved Emission Control System which collects and processes all organic vapors and gases and has an abatement efficiency of at least 90% by weight. The system shall be operated until the concentration of organic compounds in the tank is less than 10,000 ppm expressed as methane.

328.2 For all tanks subject to this rule, tank degassing shall not commence after the District predicts an excess of the Federal or State Ambient Air Quality Standard for ozone for the following day, unless emissions resulting from degassing are controlled by one of the methods in Section 8-5-328.1.1 or 328.1.2.

~~328.1 Liquid Balancing in which the resulting organic liquid has a true vapor pressure less than 0.5 psia.~~

~~328.2 An Approved Emission Control System which collects and processes all organic vapors and gases and has an abatement efficiency of at least 90% by weight. The system shall be operated until the concentration of organic compounds in the tank is less than 10,000 ppm expressed as methane.~~

~~(Adopted January 20, 1993)~~

~~8-5-329 Ozone Excess Day Prohibition:~~ ~~Except as provided in Section 8-5-328, tank degassing shall not commence after the District predicts an excess of the Federal or State Ambient Air Quality Standard for ozone for the following day.~~

~~(Adopted January 20, 1993)~~

~~8-5-330 Viewport Installation:~~ ~~Effective February 1, 1993, all internal floating roof tanks subject to the requirements of Sections 8-5-311, 321 and 322 that have been degassed shall be equipped with at least 3 viewing ports.~~

~~(Adopted January 20, 1993)~~

8-5-400 ADMINISTRATIVE REQUIREMENTS

8-5-401 Inspection Requirements for External Floating Roof Tanks: Tanks subject to the requirements of Section 8-5-304 shall be inspected by the operator as follows:

401.1 The entire circumference of each primary and secondary seal shall be inspected for compliance with the requirements of Sections 8-5-321 and 8-5-322 twice per calendar year at 4 to 8 month intervals. If a new primary or secondary seal is installed, both seals shall be inspected at the time of the seal installation.

401.2 Tank fittings shall be inspected for compliance with the requirements of Section 8-5-320 twice per calendar year at 4 to 8 month intervals.

8-5-402 Inspection Requirements for Internal Floating Roof Tanks: Tanks subject to the requirements of Section 8-5-305 shall be inspected by the operator as follows:

402.1 The entire circumference of each primary and secondary seal shall be inspected for compliance with the requirements of Sections 8-5-321 and 8-5-322. The time between inspections shall not exceed 10 years. If a new primary or secondary seal is installed, both seals shall be inspected at the time of the seal installation.

402.2 The entire circumference of each secondary seal shall be visually inspected for compliance with the requirements of Sections 8-5-321.1 and 8-5-322.1 twice per calendar year at 4 to 8 month intervals.

402.3 The tank vapor space shall be inspected for compliance with the requirements of Section 8-5-305.3 twice per calendar year at 4 to 8 month intervals.

402.4 Tank fittings shall be inspected for compliance with the requirements of Section 8-5-320 twice per calendar year at 4 to 8 month intervals.

8-5-403 Inspection Requirements for Fixed Roof Tanks with Pressure Vacuum Valves: Tanks subject to the requirements of Section 8-5-303 shall be inspected for compliance with the requirements of Section 8-5-303 twice per calendar year at 4 to 8 month intervals.

~~**8-5-401 Primary Seal Inspection:** For all tanks equipped with primary seals subject to the requirements of Section 8-5-311, the seal shall be inspected for compliance with Section 8-5-321 by the operator at the following times:~~

~~401.1 Once every 10 years for tanks subject to the requirements of subsection 8-5-322.5.~~

~~401.2 After December 1, 1993, once every 10 years for tanks subject to the requirements of subsection 8-5-311.2.~~

~~401.3 Once every 5 years for all other tanks. (Amended January 20, 1993)~~

~~**8-5-402 Secondary Seal and Fitting Inspection:** For all tanks equipped with secondary seals subject to the requirements of Section 8-5-311, the seal and all fittings shall be inspected for compliance with Sections 8-5-320 and 322 by the operator at the following times:~~

~~402.1 Once every 10 years for tanks subject to the requirements of subsection 8-5-322.5.~~

~~402.2 After December 1, 1993, once every 10 years for tanks subject to the requirements of subsection 8-5-311.2.~~

~~402.3 Annually for all other tanks. (Amended January 20, 1993)~~

~~**8-5-403 Internal Floating Roof Tank Visual Inspection:** Effective February 1, 1993, all internal floating roof tanks subject to the requirements of Section 8-5-311 shall be visually inspected annually by the operator for compliance with Sections 8-5-311.2, 321.1 and 322.1.~~

~~(Amended January 20, 1993)~~

8-5-404 Certification: Within 45 days of any inspection or source test required in Section 8-5-401, 402, 403 or 502, a report shall be submitted which certifies compliance with each individual requirement of these sections.~~A report on the seal condition, gap allowances of primary and secondary seals and tank degassing equipment as prescribed in this regulation shall be submitted as follows:~~

~~404.1 For all primary seals, certification of actual gap measurements shall be submitted upon installation of such primary seals, replacement of such primary seals, or prior to installation of secondary seals, and at least every 5 years following such installation or replacement unless the secondary seal is subject to the requirements of subsection 8-5-311.2 or 322.5, then the certification shall be done at least every 10 years.~~

~~404.2 For all secondary seals, certification of actual gap measurements shall be submitted as follows:~~

~~2.1 On an annual basis for tanks subject to the requirements of subsection 8-5-311.1. The time interval between tank certifications shall not exceed 15 months.~~

~~2.2 At least once every 10 years for tanks subject to the requirements of subsection 8-5-311.2.~~

~~404.3 For all tank degassing equipment, the results of an annual source test verifying compliance with the provisions in subsection 8-5-328.2 shall be submitted on an annual basis.~~

(Amended, Renumbered 9/4/85; Amended 5/4/88; 1/20/93)

8-5-405 Information Required: All reports relating to seal condition and gap measurements shall include the following information:

405.1 Date of inspection.

405.2 Actual gap measurements between the tank shell and seals, both the primary seal and the secondary seal, shall be measured around the full circumference of the tank.

405.3 Data, supported by calculations, showing whether or not the requirements of Sections 8-5-320, 321 and 322 are being met.

(Amended, Renumbered 9/4/85; Amended 5/4/88; 1/20/93)

8-5-410 Deleted May 4, 1988

8-5-500 MONITORING AND RECORDS

8-5-501 Records:

501.1 A person whose tanks are subject to this rule shall keep an accurate record of liquids stored and the true vapor pressure ranges of such liquids. Effective 9/1/02, these records shall be kept for at least 24 months.

501.2 For internal and external floating roof tanks, a person who replaces all or part of a primary or secondary seal shall keep an accurate record of the length of seal replaced and the date(s) on which replacement occurred. These records shall be kept for at least 10 years. (Amended January 20, 1993)

8-5-502 Tank Degassing~~Cleaning~~ Annual Source Test Requirement: Any person operating an Approved Emission Control System to comply with the requirements of subsection 8-5-328.1.2 shall test the system annually as prescribed in subsection 8-5-603.2.

(Adopted January 20, 1993)

8-5-503 Portable Hydrocarbon Detector: Any instrument used for the measurement of organic compounds as specified by subsection 8-5-303.2, 306 and 307 shall be a combustible gas indicator that meets the specifications and performance criteria of and has been calibrated in accordance with EPA Reference Method 21 (40 CFR 60, Appendix A). (Adopted January 20, 1993)

8-5-600 MANUAL OF PROCEDURES

8-5-601 Analysis of Samples, Reid Vapor Pressure: Samples of organic compounds as specified in this Rule shall be analyzed for Reid Vapor Pressure as prescribed in the Manual of Procedures, Volume III, Lab Method 13. (Amended 9/4/85; 5/4/88)

8-5-602 Analysis of Samples, True Vapor Pressure: Samples of organic compounds not listed in Table I shall be analyzed for true Vapor Pressure at the tank storage temperature as prescribed in the Manual of Procedures, Volume III, Lab Method 28.

(Adopted 9/4/85; Amended 5/4/88)

8-5-603 Determination of Emissions: Emissions of organic compounds shall be determined as follows:

603.1 Emissions of organic compounds as specified in subsection 8-5-306~~311.3~~ shall be measured as prescribed in the Manual of Procedures, Volume IV, ST-4.

603.2 Emissions of organic compounds as specified in subsection 8-5-328.1.2 shall be measured as prescribed in the Manual of Procedures, Volume IV, ST-7.

(Renumbered 9/4/85; Amended 1/20/93)

8-5-604 Determination of Applicability: Table I shall be used to determine if a storage tank is subject to the requirements of this rule. For organic compounds not listed in Table I, refer to Sections 8-5-601 or 602.

(Adopted 9/4/85; Amended 5/4/88; 1/20/93)

8-5-605 **Pressure-Vacuum Valve Gas Tight Determination:** Determination of organic compound leak concentrations as specified by subsection 8-5-303.2, 306 and 307~~320.3~~ shall be conducted by EPA Reference Method 21 (40 CFR 60, Appendix A).

(Adopted January 20, 1993)

TABLE I

STORAGE TEMPERATURE VERSUS TRUE VAPOR PRESSURE (TVP)

	Density (lb/gal)	Reference Gravity API	IBP ^{o}F	Max. Temp. ^{0}F Not to Exceed 0.5 Psia TVP	Max. Temp. ^{0}F Not to Exceed 1.5 Psia TVP
Crude Oils:*		-	-	-	-
San Joaquin Valley	-	-	390	249	-
Middle Distillates:					
Kerosene	-	42.5	350	195	250
Diesel	-	36.4	372	230	290
Gas Oil	-	26.2	390	249	310
Stove Oil	-	23	421	275	340
Jet Fuels:					
JP-1	-	43.1	330	165	230
JP-3	-	54.7	110	-	25
JP-4	-	51.5	150	20	68
JP-5	-	39.6	355	205	260
JP-7	-	44-50	360	205	260
Fuel Oil:					
No. 1	-	42.5	350	195	250
No. 2	-	36.4	372	230	290
No. 3	-	26.2	390	249	310
No. 4	-	23	421	275	340
No. 5	-	19.9	560	380	465
No. 6	-	16.2	625	450	-
Asphalts:					
60-100 pen.	-	-	-	490	550
120-150 pen.	-	-	-	450	500
200-300 pen.	-	-	-	360	420
Organic Compounds:					
Acetone	6.6	47	133	-	35
Acrylonitrile	6.8	41.8	173	30	62
Benzene	7.4	27.7	176	34	70
Carbon Disulfide	10.6	22.1	116	-	10
Carbon Tetrachloride	13.4	-	170	20	63
Chloroform	12.5	-	142	-	40
Cyclohexane	6.5	49.7	177	30	65
1,2 Dichloroethane	10.5	-	180	35	75
Ethyl Acetate	7.5	23.6	171	38	70
Ethyl Alcohol	6.6	47.0	173	55	85
Isopropyl Alcohol	6.6	47.0	181	62	95
Methyl Alcohol	6.6	47.0	148	30	62
Methyl Ethyl Ketone	6.7	44.3	175	30	70
Toluene	7.3	30	231	75	120
Vinylacetate	7.8	19.6	163	30	65

* True vapor pressure for crude oils should be determined from the specific crude slate.