

**REGULATION 8  
ORGANIC COMPOUNDS  
RULE 5  
STORAGE OF ORGANIC LIQUIDS**

**INDEX**

**8-5-100 GENERAL**

- 8-5-101 Description
- 8-5-110 Exemptions
- 8-5-111 Limited Exemption, Tank Removal From and Return to Service
- 8-5-112 Limited Exemption, ~~Floating Roofs~~ Tanks in Operation
- 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
- 8-5-117 Exemption, Low Vapor Pressure

**8-5-200 DEFINITIONS**

- 8-5-201 Abatement Efficiency
- 8-5-202 Storage Tank
- 8-5-203 Submerged Fill Pipe
- 8-5-204 Organic Liquid
- 8-5-205 Gasoline
- 8-5-206 Gas Tight
- 8-5-207 Approved Emission Control System
- 8-5-208 Degassing
- 8-5-209 External Floating Roof Tank
- 8-5-210 Internal Floating Roof Tank
- 8-5-211 True Vapor Pressure
- 8-5-212 Organic Compound
- 8-5-213 Viewport
- 8-5-214 Gauge Float
- 8-5-215 Guidepole
- 8-5-216 Zero Gap Pole Wiper Seal

**8-5-300 STANDARDS**

- 8-5-301 Storage Tanks Smaller than 75 m<sup>3</sup>
- 8-5-302 Above Ground Gasoline Tanks Smaller than 75 m<sup>3</sup>
- 8-5-303 Above Ground Storage Tanks Greater than 37.5 m<sup>3</sup> and less than 75 m<sup>3</sup>
- 8-5-304 Storage Tanks Larger than 75 m<sup>3</sup>
- 8-5-305 Storage Tanks Storing Organic Liquids with a True Vapor Pressure Greater than 569 mm Hg (11 psia)
- 8-5-310 Deleted May 4, 1988
- 8-5-311 Vapor Loss Control Device Requirements
- 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
- 8-5-321 Primary Seal Requirements
- 8-5-322 Secondary Seal Requirements
- 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 Cleaning Requirements
- 8-5-329 Ozone Excess Day Prohibition
- 8-5-330 Viewport Installation

**8-5-400 ADMINISTRATIVE REQUIREMENTS**

- 8-5-401 Primary Seal Inspection
- 8-5-402 Secondary Seal and Fitting Inspection
- 8-5-403 Internal Floating Roof Tank Visual Inspection
- 8-5-404 Certification
- 8-5-405 Information Required
- 8-5-410 Deleted May 4, 1988

**8-5-500 MONITORING AND RECORDS**

- 8-5-501 Records
- 8-5-502 Tank Cleaning Annual Source Test Requirement
- 8-5-503 Portable Hydrocarbon Detector

**8-5-600 MANUAL OF PROCEDURES**

- 8-5-601 Analysis of Samples, Reid Vapor Pressure
- 8-5-602 Analysis of Samples, True Vapor Pressure
- 8-5-603 Determination of Emissions
- 8-5-604 Determination of Applicability
- 8-5-605 Pressure-Vacuum Valve Gas Tight Determination

**REGULATION 8  
ORGANIC COMPOUNDS  
RULE 5  
STORAGE OF ORGANIC LIQUIDS**

(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 September 4, 1985; May 4, 1988; January 20, 1993)

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

- 110.1 Stationary storage tanks having a capacity of less than 1.0 m<sup>3</sup> (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<sup>3</sup> (2,008 gal), or an underground tank with an offset fill line.
- 110.3 Any above ground gasoline tank of 7.6 m<sup>3</sup> (2,008 gal) or less capacity installed and in service prior to January 9, 1976, and equipped with a submerged fill pipe. (Amended May 4, 1988; January 20, 1993)

**8-5-111 Limited Exemption, Tank Removal From and Return to Service:** The requirements of Sections 8-5-311 shall not apply to storage tanks 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 Three days prior to such work being done, written notice is received by 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 Sections 8-5-328 and 329 are satisfied.

(Amended January 20, 1993)

**8-5-112 Limited Exemption, Floating Roofs Tanks in Operation:** The requirements of Section 8-5-311 and 8-5-320 shall not apply to storage tanks during preventative maintenance of a vapor control device, roof repair, primary seal inspection, or removal and installation of a secondary seal if the following conditions are met:

- 112.1 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.

- 112.2 Product shall be moved neither in nor out of the storage tank and emissions shall be minimized.
- 112.3 ~~If an Authority to Construct is required, in accordance with Regulation 2, Rule 1, Section 301, then one shall be obtained.~~
- 112.4<sub>3</sub> The time of exemption, allowed under this section, does not exceed 7 days.
- 112.4 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 May 4, 1988; January 20, 1993)

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. (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 September 4, 1985; Amended January 20, 1993)

8-5-205 **Gasoline:** Petroleum distillates used as motor fuel with a Reid vapor pressure greater than 4.0 psia. (Adopted September 4, 1985; Amended May 4, 1988)

8-5-206 **Gas Tight:** A concentration of organic compounds, measured 1 cm or less from any source, of less than 10,000 ppm (expressed as methane) above background.  
(Adopted May 4, 1988; Amended January 20, 1993)

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.
- 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.
- 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.

**8-5-300 STANDARDS**

- 8-5-301 Storage Tanks Smaller than 150m<sup>3</sup>:** 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<sup>3</sup> (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 311. (Amended September 4, 1985; May 4, 1988; January 20, 1993)
- 8-5-302 Above Ground Gasoline Storage Tanks Smaller than 75 m<sup>3</sup>:** A person shall not store gasoline in any above ground storage tank of 75 m<sup>3</sup> (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 psia) pressure or is equipped with a vapor loss control device which complies with the requirements set forth in Section 311. (Amended September 4, 1985; May 4, 1988; January 20, 1993)
- 8-5-303 Above Ground Storage Tanks Larger than 37.5 m<sup>3</sup> and Smaller than 75 m<sup>3</sup>:** 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<sup>3</sup> (9,906 gal) and less than 75 m<sup>3</sup> (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 psia) pressure or is equipped with a vapor loss control device which complies with the requirements set forth in Section 8-5-311. (Adopted September 4, 1985; Amended May 4, 1988; January 20, 1993)
- 8-5-304 Storage Tanks Larger than 75 m<sup>3</sup>:** A person shall not store organic liquid in any storage tank with a capacity greater than 75 m<sup>3</sup> (19,813 gal) unless such tank meets the following conditions:
- 304.1 Storage tanks with a capacity greater than 75 m<sup>3</sup> (19,813 gal) but less than 150 m<sup>3</sup> (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<sup>3</sup> (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 May 4, 1988; January 20, 1993)
- 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.

**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 8-5-311 shall meet the following conditions:

- 320.1 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 in the roof, except pressure-vacuum valves, 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.
  - 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 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 For inaccessible openings on internal floating roof tanks, there shall be no visible gaps as viewed from the fixed roof manway, 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 psiag), 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, The the well on external floating roof shall be equipped with the following: a sliding 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 1.3 cm (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; May 4, 1988; January 20, 1993)

**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 8-5-311 unless such tank meets the following conditions:

- 321.1 There shall be no holes, tears, or other openings in the primary ~~or secondary~~ seal fabric which allow the emission of organic vapors.
- 321.2 The seal shall be liquid mounted except as provided in subsection 8-5-311.2.2.
- 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, 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 For riveted 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.
- 321.4 For resilient-toroid-seal 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 January 20, 1993)

**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 8-5-311, 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, 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.
- 322.5 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.

(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 Cleaning Requirements:** Effective June 1, 1993, 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:

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 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:** 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 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 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 May 4, 1988; January 20, 1993)

**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 May 4, 1988; January 20, 1993)

**8-5-410 Deleted May 4, 1988**

#### **8-5-500 MONITORING AND RECORDS**

**8-5-501 Records:** 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.

(Amended January 20, 1993)

**8-5-502 Tank Cleaning Annual Source Test Requirement:** Any person operating an Approved Emission Control System to comply with the requirements of subsection 8-5-328.2 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 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 September 4, 1985; May 4, 1988)

**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 September 4, 1985; Amended May 4, 1988)

**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 8-5-311.3 shall be measured as prescribed in the Manual of Procedures, Volume IV, ST-4.
- 603.2 Emissions of organic compounds as specified in subsection 8-5-328.2 shall be measured as prescribed in the Manual of Procedures, Volume IV, ST-7.

(Renumbered September 4, 1985; Amended January 20, 1993)

**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 May 4, 1988; January 20, 1993)

**8-5-605 Pressure-Vacuum Valve Gas Tight Determination:** Determination of organic compound leak concentrations as specified by subsection 8-5-320.3 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<br>(lb/gal) | Reference<br>Gravity API | IBP °F | Max. Temp. °F Not to Exceed |                 |
|----------------------------|---------------------|--------------------------|--------|-----------------------------|-----------------|
|                            |                     |                          |        | 0.5 Psia<br>TVP             | 1.5 Psia<br>TVP |
| <b>Crude Oils:*</b>        |                     | -                        | -      | -                           | -               |
| San Joaquin Valley         | -                   | -                        | 390    | 249                         | -               |
| <b>Middle Distillates:</b> |                     |                          |        |                             |                 |
| 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             |
| <b>Jet Fuels:</b>          |                     |                          |        |                             |                 |
| 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             |
| <b>Fuel Oil:</b>           |                     |                          |        |                             |                 |
| 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                         | -               |
| <b>Asphalts:</b>           |                     |                          |        |                             |                 |
| 60-100 pen.                | -                   | -                        | -      | 490                         | 550             |
| 120-150 pen.               | -                   | -                        | -      | 450                         | 500             |
| 200-300 pen.               | -                   | -                        | -      | 360                         | 420             |
| <b>Organic Compounds:</b>  |                     |                          |        |                             |                 |
| 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.

P:/ruledev/8-5/R5-10-18.doc