## REGULATION III - CONTROL OF AIR CONTAMINANTS

## RULE 350
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# MARICOPA COUNTY
# AIR POLLUTION CONTROL REGULATIONS

## REGULATION III - CONTROL OF AIR CONTAMINANTS

## RULE 350
## STORAGE OF ORGANIC LIQUIDS AT BULK PLANTS AND TERMINALS

### SECTION 100 - GENERAL

**101 PURPOSE:** To limit emissions of volatile organic compounds from organic liquids under actual storage conditions.

**102 APPLICABILITY:** This rule is applicable to the transfer and storage of any organic liquid in a bulk plant or bulk terminal stationary storage tank which is used primarily to fill delivery vessels.

**SECTION 200 - DEFINITIONS:** For the purpose of this rule, the following definitions shall apply:

**201 BULK PLANT -** Any loading facility at which gasoline and/or other organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under any actual storage conditions are received from delivery vessels for storage in on-site stationary tanks, and from which such liquids also are transferred to delivery vessels.

**202 BULK TERMINAL -** Any primary distributing loading facility which has ever received in any consecutive 30-day period over 600,000 gallons (2,271,180 l) of gasoline and/or other organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under actual storage conditions; or any loading facility where delivery of such liquids to the facility is primarily by pipeline.

**203 DELIVERY VESSEL -** Any vehicular-mounted container such as a railroad tank car, tanker truck, tank trailer or any other mobile container used to transport organic liquids.

**204 GAS TIGHT -** Having no leak of gaseous organic compound(s) exceeding 10,000 ppm above background when measurements are made using EPA Method 21 with a methane calibration standard.



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**205 GASOLINE -** Any petroleum distillate, petroleum distillate/alcohol blend, petroleum distillate/organic compound blend, or alcohol having a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under any actual conditions of storage and handling, and which is used as a fuel for internal combustion engines.

**206 LOADING FACILITY -** Any operation or facility such as a gasoline storage tank farm, pipeline terminal, bulk plant, loading dock or combination thereof, where organic liquids are transferred or loaded into or out of delivery vessels for future distrbution. Included are all related pollutant-emitting activities which are located on one or more contiguous or adjacent properties, and are under the control of the same person or persons under common control.

**207 ORGANIC LIQUID -** Any organic compound which exists as a liquid under any actual conditions of use, transport or storage.

**208 STATIONARY STORAGE TANK -** Any tank, reservoir or other container used to store, but not transport, organic liquids.

**209 SUBMERGED FILL PIPE -** Any discharge pipe or nozzle which meets the applicable specification as follows:

**209.1 Top-Filled Or Bottom-Filled Tanks:** The end of the discharge pipe or nozzle is totally submerged when the liquid level is six inches (15 cm) from the bottom of the tank.

**209.2 Side-Filled:** The end of the discharge pipe or nozzle is totally submerged when the liquid level is 18 inches (46 cm) from the bottom of the tank.

**210 TRUE VAPOR PRESSURE (TVP) -** Absolute vapor pressure of a liquid at its existing temperature of storage and handling.

**211 VAPOR LOSS CONTROL DEVICE -** Any piping, hoses, equipment, and devices which are used to collect, store and/or process organic vapors at a bulk terminal, bulk plant, service station or other operation handling gasoline and/or other organic liquids.

**212 VAPOR TIGHT -** A condition where no organic vapor leak reaches or exceeds 100 percent of the lower explosive limit at a distance of one inch (2.5 cm) from a leak when measured with a combustible gas detector or an organic vapor analyzer, both calibrated with propane.

## SECTION 300 - STANDARDS



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**301 ALL STORAGE TANKS GREATER THAN 250 GALLONS (946 L):** No person shall install or use a stationary storage tank with a capacity greater than 250 gallons (946 l) for storing organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or more unless such a tank meets the following requirements:

**301.1** The tank has a submerged fill pipe; and

Note[1]

**301.2** The tank has a pressure/vacuum valve which is set within ten percent of the tank's maximum, safe working-pressure.

**302 GASOLINE STORAGE TANKS BETWEEN 250 AND 40,000 GALLONS (946 -151,400 L):** No person shall store gasoline in a stationary storage tank with a capacity less than 40,000 gallons (151,400 l) but greater than 250 gallons (946 l) unless the tank is equipped with a vapor recovery system which collects and returns displaced vapors to the delivery vessel using vapor-tight fittings and lines; or such tank uses at least one of the vapor loss control methods in Sections 306, 307, or 308 of this rule.

**303 ORGANIC LIQUID STORAGE TANKS OF 20,000 THROUGH 39,999 GALLONS CAPACITY (75,700 - 151,396 L):** No person shall store organic liquids with a true vapor pressure (TVP) of 1.5 through 11.0 psia (77.5 - 569 mm Hg) in a stationary tank with a capacity from 20,000 through 39,999 gallons (75,700 - 151,396 l) unless the tank is equipped with a vapor recovery system which collects and returns displaced vapors to the delivery vessel using vapor-tight fittings and lines; or such tank uses at least one of the vapor loss control methods specified in Sections 306, 307, or 308 of this rule.

**304 STORAGE TANKS OF 40,000 GALLONS (151,400 L) OR MORE:** No person shall place, store or hold in any stationary storage tank having a capacity of 40,000 gallons (151,400 L) or more, any gasoline or organic liquid having a true vapor pressure of 1.5 psia (77.5 mm Hg) or greater under actual storage conditions, unless such storage tank is equipped with at least one of the vapor loss control devices specified in Sections 306, 307, or 308 of this rule.

**305 TANKS STORING LIQUIDS HAVING VAPOR PRESSURES EXCEEDING 11 PSIA:** No person shall place, store, or hold in a stationary tank having a capacity over 250 gallons (946 l) organic liquid(s) with a true vapor pressure above 11.0 psia (569 mm Hg) unless such a tank is either a pressure tank maintaining working pressure sufficient at all times to prevent organic vapor/gas loss to the atmosphere or is equipped with a vapor collection/processing system specified in Section 308 of this rule.

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[1] This note is not part of Rule 350, but is provided for the reader's convenience. The requirement of subsection 301.2 for a pressure/vacuum valve is not applicable to floating roof tanks.



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**306 EXTERNAL FLOATING ROOF STORAGE TANKS:** This vapor loss control device is an uncovered floating roof consisting of either a pontoon type or a double-deck type roof. It must rest on and be supported by the surface of the liquid contents, be equipped with a continuous primary seal to close the space between the roof eave and tank wall, except as provided in subsection 309.1 and have a continuous secondary seal which is of a design that is in accordance with accepted standards of the petroleum industry. The secondary seal shall meet the following requirements:

**306.1** The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge or primary seal and the tank wall, except as provided in subsection 306.2 of this rule. Storage tanks constructed after July 13, 1988, shall have a secondary seal that is rim-mounted. Except for tanks having metallic shoe primary seals onto which secondary seals were installed prior to July 13, 1988, by October 6, 1993 no person shall operate an external floating roof tank subject to the provisions of this rule unless a secondary seal extends from the roof to the tank shell (a rim-mounted seal) and is not attached to the primary seal.

**306.2** The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 1.0 square inch per foot (21.2 $cm^2$ per meter) of tank diameter. Determinations of gap area shall only be made at the point(s) where the gaps exceed 1/8 inch (3 mm). The width of any portion of any gap shall not exceed 1/2 inch (1.27 cm).

**306.3** The owner or operator is exempted from the requirements for secondary seals and the secondary seal gap criteria when performing gap measurements or inspections of the primary seal.

**307 INTERNAL FLOATING ROOF TANKS WITH FIXED COVERING:** This vapor loss control device is a covered tank with an internal floating roof resting on the contained liquid. This tank and its appurtenances shall meet the applicable requirements as follows:

**307.1** Bulk terminal tanks for which construction, reconstruction or modification commenced after July 23, 1984, must comply with all applicable requirements of the EPA New Source Performance Standard (NSPS), 40 CFR Part 60, Subpart Kb.

**307.2** All tanks not subject to subsection 307.1 must comply with one of the following:



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**a.** Comply with 40 CFR Part 60, Subpart Kb, notwithstanding the type of facility and the date of tank construction, reconstruction or modification; or

**b.** Have at least one continuous seal which completely covers the space between the roof edge and tank wall, except as provided in subsection 309.1, and meet at least one of the following requirements:

**(1)** Have a contact-type roof resting completely on the liquid surface.

**(2)** Have a liquid mounted seal.

**(3)** Have two seals, a primary and a secondary.

**308 VAPOR COLLECTION/PROCESSING SYSTEM:** This vapor loss control device consists of a vapor gathering subsystem capable of collecting the organic vapors and organic gases plus a second subsystem capable of processing such vapors and gases, preventing at least 95 percent by weight of the volatile organic compounds entering it from escaping to the atmosphere.

**308.1** The vapor processing subsystem shall be gas-tight except for the designated exhaust.

**308.2** Any tank gauging or sampling device on a tank, vented to such a vapor collection/processing system, shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling procedures.

**308.3** All pressure-vacuum valves shall be constructed and maintained in a gas tight condition except when the operating pressure exceeds the valve release setting.

**309 ADDITIONAL REQUIREMENTS:**

**309.1 Prohibition - Floating Roof Openings:** Floating roof tanks subject to the provisions of Section 306 or 307 of this rule shall have no visible holes, tears or other openings in the seal or in any seal fabric. The accumulated area of gaps between a tank's wall and primary seal shall not exceed 10 square inches per foot of tank diameter (212 $cm^2$ per meter) and the width of any portion of any gap shall not exceed 1½ inches (3.8 cm). Where applicable, all openings except drains shall be equipped with a cover seal or lid. The cover seal or lid shall be in a closed position at all times, except when the device is in actual use. Automatic bleeder vents shall be closed at all times, except when the roof is floated off or landed on the roof leg supports. Rim vents, if provided, shall be set to open only when the roof is



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being floated off the roof leg supports or at the manufacturer's recommended setting.

**309.2** Tanks and all required emission control equipment shall be properly installed, properly maintained and be properly operating.

**310 EXEMPTIONS:**

**310.1** A pressure tank maintaining working pressure sufficient at all times to prevent organic vapor or gas loss to the atmosphere is exempt from Sections 301, 302, 303, and 304 of this rule.

**310.2** During the following periods a floating roof is exempt from the requirement that its roof be floating: when the tank is being drained completely and when it is being filled, as long as both processes are accomplished continuously and as rapidly as practicable.

**310.3** A horizontal filling nozzle at its highest point within a floating roof tank exceeding 2,000,000 gallons (7,580,000 l) capacity may be up to 39.4 inches (1 meter) above the tank bottom if: except when the tank is emptied completely, the nozzle is kept completely submerged, including when the roof rests on its legs.

## SECTION 400 - ADMINISTRATIVE REQUIREMENTS

**401 ANNUAL INSPECTIONS OF EXTERNAL FLOATING ROOF TANKS:** The owner or operator of any tank which uses an external floating roof to meet the vapor loss control requirements of this rule shall make the primary seal envelope and the secondary seal available for unobstructed inspection by the Control Officer on an annual basis. The primary seal envelope shall be made available for inspection at a minimum of four locations selected along its circumference at random by the Control Officer. If the Control Officer detects a violation as a result of any such inspection, the Control Officer may require such further unobstructed inspection of the seals as may be necessary to determine the seal condition for its entire circumference.

**402 ANNUAL INSPECTIONS OF INTERNAL FLOATING ROOF TANKS:** The owner or operator of any tank which uses an internal floating roof to meet the vapor loss control requirements of this rule shall make the entire tank including the internal floating roof available for inspection prior to filling. It shall be made available for visual inspection through the manholes or roof hatches on the fixed covering on an annual basis. Roofs which practicably can be walked on shall annually be made available for hands-on inspection.



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**403 FIVE-YEAR, FULL CIRCUMFERENCE INSPECTIONS:** As of July 13, 1988, the owner or operator of a floating roof tank of 20,000 gallons (75,700 l) or more storing an organic liquid with a TVP of 1.5 psia (77.5 mm Hg) or greater shall make the primary seal envelope available for inspection by the Control Officer for its full length every five years. However, if prior thereto the secondary seal is removed or if the tank is drained and cleaned by the owner or operator for any reason, it shall be made available for such inspection at that time. The owner or operator shall provide notification to the Control Officer no less than seven working days prior to removal of the secondary seal. The owner or operator shall perform a complete inspection of the primary seal and floating roof, including measurement of gap area and maximum gap, whenever the tank is emptied for non-operational reasons or at least every five years, whichever is more frequent.

**404 SEMI-ANNUAL INSPECTIONS BY OWNER OR OPERATOR:** The owner or operator of any floating roof tank subject to this rule shall inspect the tank and seals at least once every six months to determine ongoing compliance with both the applicable standards of this rule and any permit conditions pertaining to the tank. Determinations of secondary seal gap area on external floating roofs need be made only once per year. Records of these inspections shall be maintained and shall be made available to the Control Officer upon request.

**405 COMPLIANCE SCHEDULE:** By October 6, 1992, any person subject to Section 300 who does not comply with all its provisions shall submit to the Control Officer for approval an emission control plan describing the method(s) to be used to achieve full compliance by October 6, 1993. This plan shall specify dates for completing increments of progress, such as the contractual arrival date of new control equipment. The Control Officer may require a person submitting such an emission control plan to submit subsequent reports on progress in achieving compliance.

## SECTION 500 - MONITORING AND RECORDS

**501 VAPOR PRESSURE RECORDS:** A person whose tanks are subject to the provisions of this rule shall keep accurate records of liquids stored in such tanks including either the true or the Reid vapor pressure ranges of each such liquid. The temperature of the contents of each affected tank located at bulk terminals shall be recorded at least weekly and the true vapor pressure of each shall be recorded at least once each month. These records shall be kept a minimum of three years.

**502 COMPLIANCE DETERMINATION - TEST METHODS:** When more than one test method is permitted for a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation of this rule.

**502.1 Determination Of Vapor-Tight Condition:** Applicable procedures of Rule 351, Section 501.



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**502.2 Emission Rates And Control Device Efficiency:** EPA Reference Methods 2A, 2B, 18 and 25A.

**502.3 Gaseous Leak Detection And Determination Of Gas-Tight Condition:** EPA Method 21.

**502.4 Reid Vapor Pressure:** Reid vapor pressure shall be determined by ASTM Method D323-82 or by ASTM Method D-5191.

**502.5 True Vapor Pressure:** True vapor pressure shall be determined by ASTM Method 2879-83 and by temperature measurement under actual conditions using an instrument accurate to within ± 1 degree Fahrenheit or ± 0.5 degree Celsius. For purposes of recording and reporting, the Reid vapor pressure and the foregoing temperature determination may be used in conjunction with the method of American Petroleum Institute Bulletin 2517, February, 1980, to determine true vapor pressure, unless the Control Officer specifies ASTM Method 2879-83.

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