OTC Model Rule for xxxx(Large Above Ground VOC Storage Tanks)

This model rule was developed by the Ozone Transport Commission (OTC) as part of a regional effort to attain and maintain the National Ambient Air Quality Eight-Hour Ozone Standard (NAAQS).

Notes:
1. States opting to promulgate rules based on this model rule must comply with State specific administrative requirements and procedures.
2. Underlined text (additions) and ~~strikeouts~~ (deletions) are changes made to the original OTC model rule dated March 6, 2001.
3. "XXXX" is a placeholder for Section numbers and title numbers.
4. The term (OTC State) or (OTC State Agency) is a placeholder for individual State names.
*5. **BOLD** text are references to agencies outside the OTC states, section titles, and for special points of interest.*
6. To allow facilities to apply for facility-specific alternative VOC control plans, states may adopt provisions similar to those at N.J.A.C. 7:27-16.17, Facility-Specific VOC Control Requirements, which can allow alternative compliance requirements based on case-by-case determinations of technical infeasibility or unreasonable costs of provisions in this model rule. N.J.A.C. 7:27-16.17(j) includes approval criteria for such plans. Also, these plans require a certified application, public comment and SIP revision. A Microsoft Word copy of N.J.A.C. 7:27-16.17 can be found at http://www.state.nj.us/dep/aqm/Sub16.doc , pages 113 though 121.

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1.1 Definitions

"Aboveground storage tank" or **"AST"** means any storage tank that is not an underground storage tank.

"AP-42" means the January 1995, 5th edition of the manual entitled "Compilation of Air Pollutant Emission Factors," which is published by the EPA, including supplements A through G and any subsequent revisions, as supplemented or amended and incorporated herein by reference. The manual may be obtained from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia, 22161, (703) 487-4650; or from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402, (202) 783-3228. In addition, the manual can

be accessed electronically through the EPA Technology Transfer Network CHIEF site at http://www.epa.gov/ttn/chief/ap42/index.html.

"Applicable VOC" means any VOC which has a vapor pressure or sum of partial pressures of organic substances of 0.02 pounds per square inch (1.0 millimeters of mercury) absolute or greater at standard conditions.

"Authorized inspector" means a person authorized by the tank owner or operator to conduct floating roof inspections. This person may be an employee of the tank owner or operator or a contractor.

"Capacity" means the volume of liquid that is capable of being stored in a vessel, determined by multiplying the vessel's internal cross-sectional area by the internal height of the shell.

"Clean produced water" means water containing less than 35 milligrams of VOC per liter, as determined by the Diesel Range Organics option under EPA SW-846 Method 8015B or NJDEP Method OQA-QAM-025, Revision 6, and/or, if necessary, EPA SW-846 Test Method 8260, as supplemented or amended, and incorporated herein by reference. Hydrocarbons heavier than C14, as determined by Test Method ASTM E 260-85, as supplemented or amended and incorporated herein by reference, may be excluded from the total concentration. This term will be used within the context of tank degassing and cleaning operations. EPA SW-846 Method 8015B and EPA SW-846 Test Method 8260 are available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161; phone number 1-800-553-6847. NJDEP Method OQA-QAM-025 Reference 6 is available on the Department's website at www.nj.gov/dep/oqa/bboard.html. Test Method ASTM E 260-85 is available from the American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, PA 19428-2959 or from its website at www.astm.org.

"Crude oil" means petroleum extracted from the earth and that has not been processed in a refining operation.

"Deck fitting" means a functional or operational device on a tank floating roof that substantially closes or seals a penetration in the deck of the floating roof including, but not limited to, any access hatch, fixed roof support column and well, gauge float, gauge hatch, sample port, guidepole, ladder and well, rim vent, roof drain, roof leg, and vacuum breaker, and excluding the rim seal system.

"Degassing" means the process of removing organic vapors from a storage tank in preparation for human entry.

"Domed roof" means a self-supporting fixed roof attached to the top of an external floating roof tank to reduce evaporative losses.

"External floating roof" means a movable roof in an otherwise open top storage vessel consisting of a floating deck resting on the surface of the liquid contents, a continuous seal supported against the inner surface of the tank shell, and an envelope closing the gap between the floating deck

and the seal, the entire deck and rim seal system free to rise and fall with the surface of the liquid during filling and emptying of the storage vessel.

"Federally enforceable" means all limitations and conditions on operation, production, or emissions that can be enforced by EPA. The foregoing limitations and conditions that can be enforced by EPA include, but are not limited to, those established in:

1. Any standards of performance for new stationary sources (NSPS) promulgated at 40 CFR 60;
2. Any national emission standard for hazardous air pollutants (NESHAP) promulgated at 40 CFR 61 or 40 CFR 63;
3. Any provision of an applicable SIP;
4. Any permit issued pursuant to requirements established at 40 CFR 51, Subpart I; 40 CFR 52.21; 40 CFR 70; or 40 CFR 71; or
5. Any permit or order issued pursuant to the *State Air Pollution Control Act, Statute Citation*, or this chapter.

"Fixed roof tank" means a tank with a roof that is permanently affixed to the shell of the tank.

"Floating roof" means an external or internal roof resting on the surface of the liquid contents in a storage vessel, and equipped with a mechanism providing one or more tight seals in the space between the floating roof rim and the vessel shell throughout the entire vertical travel distance of the roof, or any other floating type mechanism approved by the Department for the purpose of preventing air contaminants from being discharged into the outdoor atmosphere.

"Gasoline" means any petroleum distillate or petroleum distillate/oxygenated blend having a Reid vapor pressure of four pounds per square inch (207 millimeters of mercury) absolute or greater, and commonly or commercially known or sold as gasoline.

"Gauge float" means a device to indicate the level of the liquid within a tank. The float rests on the liquid surface inside a gauge well in the tank.

"Gauge hatch/sample well" means a well that consists of a pipe sleeve equipped with a self-closing gasketed cover (to reduce evaporative losses) and allows hand-gauging or sampling of the stored liquid. The gauge hatch/sample well is usually located beneath the gauger's platform, which is mounted on top of the tank shell. A cord may be attached to the self-closing gasketed cover so that the cover can be opened from the platform.

"Guidepole" means an anti-rotation device that is fixed to the top and bottom of a tank, passing through a well in a floating roof. A guidepole may be solid or be equipped with slots or holes for gauging purposes provided the guidepole is equipped with an appropriate sealing device that prevents openings that expose the stored liquid to the atmosphere.

"Hot work" means riveting, welding, flame cutting or other fire or spark-producing operation.

"In-service roof landing" means a roof landing in which the tank is not taken out of service.

"Internal floating roof" means floating roof located inside a vessel with a fixed roof.

"Ladder and well" means a ladder that passes through a well, and is used to access the top

of the internal floating roof.

"Leak" means a gaseous leak or a liquid leak of applicable VOC.

“Leak-free” means a condition that exists when the reading on a portable hydrocarbon analyzer is less than 500 ppm, expressed as methane, above background, measured using EPA Method 21, as identified in 40 CFR Part 60, Appendix A, Determination of Volatile Organic Compounds Leaks, incorporated herein by reference.

“Liquid mounted primary seal” means a primary seal that is mounted in full contact with the liquid in the annular space between the tank shell and the floating roof.

“Maximum operating level” means the highest achievable level of fluid within a tank, as determined by the structural design of the tank. In the absence of tank specific design information, the maximum operating level is equal to tank capacity.

“Mechanical shoe seal” means a metallic sheet (the shoe) that is held vertically against the vertical tank wall. The shoe is connected by braces to the floating roof and is held tightly against the wall by springs or weighted levers. A flexible coated fabric (envelope) is suspended from the shoe seal to the floating roof to form a vapor barrier over the annular space between the roof and the primary seal.

“Oily wastewater” means wastewater generated during the refinery process and which contains oil, emulsified oil, or other hydrocarbons. Oily wastewater originates from a variety of refinery processes including cooling water, condensed stripping steam, tank draw-off, and contact process water.

"Operating permit" means the permit described in Title V of the Federal Clean air Act, 42 U.S.C. §§7661 et seq., and in xxxxxx. This term shall include a general operating permit which is applicable facility wide, but does not include a general operating permit which applies only to a part of a facility. Where a general operating permit applies only to a part of a facility, the general operating permit shall be incorporated into the operating permit. This term also includes an operating permit issued for a temporary facility; for a facility subject to a MACT or GACT standard pursuant to xxxxxx; or for a component of a facility pursuant to xxxxx.

“Organic liquid” means any liquid that contains volatile organic compounds (VOCs) including, but not limited to, crude oils and petroleum distillates.

“Out-of-service” means any container, pipe, or equipment from which all liquid and sludge has been removed, all connecting lines and piping have been disconnected and blanked off, all valves (except for ventilation valves) have been closed and locked, and on which conspicuous signs have been posted that state that it is out of service and note the date of removal from service.

"Petroleum distillate" means any mixture of VOC produced by condensing vapors of petroleum during distillation, including, but not limited to, naphthas, aviation gasoline, motor gasoline, kerosene, diesel oil, domestic fuel oil, and petroleum solvents.

“Pole float” means a float located inside a guidepole that floats on the surface of the stored liquid. The rim of the float has a wiper or seal that extends to the inner surface of the pole.

“Pole sleeve” means a device that extends from either the cover or the rim of an opening in a floating roof deck to the outer surface of a pole that passes through the opening.

“Pole wiper” means a seal that extends from either the cover or the rim of an opening in a floating roof deck to the outer surface of a pole that passes through the opening.

“Pressure vessel” means a tank, reservoir, or container that is capable of maintaining working pressures sufficient to prevent organic liquid loss or VOC loss to the atmosphere at all times**.**

“Primary seal” means a seal mounted below a secondary seal of a rim seal system that consists of two seals. A primary seal, which is in contact with the floating roof tank shell, can be either mechanical shoe, resilient filled, or wiper type.

“Psia” means pounds per square inch absolute.

"Receiving vessel" means any vessel into which an applicable VOC is introduced including, but not limited to, storage tanks, delivery vessels, and manufacturing process vessels.

"Reid vapor pressure" or "RVP" means the absolute vapor pressure of a petroleum product in pounds per square inch (or kilopascals) at 100 degrees Fahrenheit (^{o}F) (37.8 degrees Celsius (^{o}C)) as measured by “Method 3- Evacuated Chamber Method” promulgated at 40 CFR 80, Appendix E; or any other equivalent test method approved in advance in writing by the Department and the EPA.

“Resilient filled primary seal” means an envelope filled with resilient foam (non-metallic polyurethane) mounted at the rim of the floating roof that makes contact with the shell. A resilient filled nonmetallic primary seal can be liquid-mounted or vapor-mounted.

“Resilient-toroid-type” seal means a core of open-cell foam encapsulated in a coated fabric that is attached to a mounting on the deck perimeter, and is continuous around the floating roof circumference.

“Rim mounted secondary seal” means a secondary seal mounted on the rim of the floating roof of a storage tank. Rim mounted secondary seals are effective at reducing losses from the primary seal fabric.

“Rim seal system” means a closure device between the shell of the storage tank and the floating roof edge. A rim seal system may consist of two seals, one above the other. The lower seal is referred to as the primary seal and the upper seal is referred to as the secondary seal.

“Rim vent” means a vent used on tanks equipped with a seal design, such as a mechanical shoe seal, that creates a vapor pocket in the seal and rim area. The vent is used to release excess pressure or vacuum that is present in the vapor space bounded by the primary-seal shoe, the floating roof rim, the primary seal fabric, and the liquid level. A rim vent usually consists of a weighted pallet that rests on a gasketed cover.

“Roof drain” means a drain that permits the removal of rainwater from the surface of external floating roofs. A roof drain may be a closed drainage system that carries rainwater from the surface of the floating roof to the outside of the tank, or an open drainage system consisting of an open pipe that extends a short distance below the bottom of the deck allowing rainwater to drain from the surface of the floating roof into the organic liquid contents of the tank.

“Roof landing” means an event where the liquid level in a floating roof tank is lowered to the point where the floating roof is resting on its legs or is supported from above by cables or hangers, and is no longer floating on the surface of the stored liquid.

“Roof leg” means an adjustable or fixed leg that is attached to the floating roof deck to support or hold the floating roof deck at a predetermined distance off the tank bottom to prevent damage to the fittings located underneath the deck and to allow for tank cleaning or repair. For adjustable legs, the load-carrying element passes through a well or sleeve in the deck.

“Roof opening” means any opening through a floating roof of a storage tank for any deck fitting.

“Secondary seal” means a seal mounted above the primary seal of a rim seal system that consists of two seals. Secondary seals can be shoe mounted or rim-mounted.

“Shoe mounted secondary seal” means a secondary seal mounted on the primary mechanical shoe. Shoe mounted secondary seals are effective at reducing vapor losses from the gaps between the shoe and the tank shell.

“Slop Oil” means the floating oil and solids that accumulate on the surface of an oil-water separator.

"Standard conditions" means 70 degrees Fahrenheit (^{o}F) (21.1 degrees Celsius (^{o}C)) and one atmosphere pressure (14.7 pounds per square inch absolute or 760.0 millimeters of mercury).

"Storage tank" means any tank, reservoir, or vessel which is a container for liquids or gases, wherein:

1. No manufacturing process, or part thereof, other than filling or emptying takes place; and

2. The only treatment carried out is that necessary to prevent change from occurring in the physical condition or chemical properties of the liquids or gases deposited into the container. Such treatment may include recirculating, agitating, maintaining the temperature of the stored liquids or gases, or replacing air in the vapor space above the stored liquids or gases with an inert gas in order to inhibit the occurrence of chemical reaction.

"Submerged fill pipe" means a fill pipe whose point of discharge into the receiving vessel is entirely submerged when the liquid level is no more than 6 inches (15.2 centimeters) above the vessel bottom or, in the case of a top or side-entering fill pipe, when the liquid level is no more than three times the inside radius of the fill pipe plus 5 inches (12.7 centimeters), but no more than 42 inches (106.7 centimeters), above the vessel bottom.

"Tank" means any container whose walls are constructed of material which is rigid and self-supporting.

"Thermal oxidizer" means a type of control apparatus which reduces the emission of air contaminants by subjecting the gases being emitted to elevated temperatures which cause the air contaminant molecules to decompose within an enclosed space. For the purposes of this subchapter, this term includes catalytic and non-catalytic thermal oxidizers.

“True vapor pressure” or **“TVP”** means the equilibrium partial vapor pressure exerted by an organic liquid at actual storage temperature.

“Vacuum breaker” means a device used to equalize the pressure of the vapor space across the floating roof deck as the deck is either being landed on or floated off its legs.

"Vapor control system" means a system for preventing the emission of organic vapors into

the outdoor atmosphere.

"Vapor-mounted primary seal" means a rim seal which is mounted so that underneath the seal there is an annular vapor space which is bounded by the bottom of the seal, the vessel wall, the liquid surface, and the floating roof.

"Vapor pressure" means the pressure of the vapor phase of a substance, or the sum of the partial pressures of the vapor phases of individual substances in a mixture of substances, when in equilibrium with the non-vapor phase of the substance or substances.

“Visible gap” means a gap of a deck fitting or roof opening of more than 1/8 inch (0.32 centimeters) between any gasket or seal and the opening that it is intended to seal.

"Volatile organic compound" or **"VOC"** means a volatile organic compound as that term is defined by the EPA at 40 CFR 51.100(s), as supplemented or amended, which is incorporated by reference herein.

“Wiper primary seal” means a continuous annular blade of flexible material (for example, rubber, urethane, or foam filled) fastened to a mounting bracket on the deck perimeter that spans the annular rim space and contacts the tank shell. A wiper seal system may consist of a single primary seal, or dual (multiple) seals where one seal is mounted above the other.

1.2 Stationary storage tanks

(a) The provisions of this section shall apply to any above ground stationary storage tank that stores only VOC, or that stores VOC and non-VOC, except as set forth in (e) and (f) below.

(b) No person shall cause, suffer, allow, or permit the following:

1. The storage of any applicable VOC in any stationary storage tank that has a maximum capacity of 2,000 gallons (7,570 liters) or greater and is exposed to the rays of the sun unless**:**

    i. The external surfaces of the tank are either mill-finished aluminum or are painted and maintained white upon the next painting of the tank,or upon being returned to service after being out of service for the first time after the operative date of this rule, whichever is sooner, and no less than 10 years after the operative date of the rule, except that this provision shall not apply to words and logograms applied to the external surface of the storage tank for purposes of identification provided such symbols do not cover more than 20 percent of the external surface area of the tank's sides and top or more than 200 square feet (18.6 square meters), whichever is less ; or

    ii. An equivalent method of emission control approved by the Department is used; and

2. The storage of any VOC with a vapor pressure of 0.75 psia or greater at standard conditions in any stationary storage tank having a maximum capacity of 40,000 gallons (151,418 liters) or greater unless, in addition to meeting the requirement in (b)1 above, such stationary storage tank is equipped with a floating roof or other control apparatus approved by the Department as being equally or more effective in preventing the emission of a VOC into the outdoor atmosphere.

(c) No person shall cause, suffer, allow, or permit the storage of any VOC having a vapor pressure of greater than 13.0 pounds per square inch absolute (672 millimeters of mercury) at the actual temperature existing at or near the liquid surface in any stationary storage tank having a maximum capacity of 1,000 gallons (3,785 liters) or greater unless such tank is equipped with a vapor control system to reduce the rate of VOC emissions to the outdoor atmosphere by at least 90 percent by weight of the uncontrolled VOC emissions from the tank.

(d) No person shall cause, suffer, allow, or permit the storage of any VOC in any stationary storage tank subject to the provisions of either (b)2 above or (c) above and equipped with gauging and/or sampling systems that penetrate the tank shell unless such systems are vapor-tight.

(e) The provisions of (b) and (c) above shall not apply to a stationary storage tank that is not in Range III and is located underground at a depth of no less than eight inches (20.3 centimeters) below the surface measured to the highest point of the tank shell, or installed in other manner approved by the Department as being equally or more effective in preventing the emission of any VOC into the outdoor atmosphere.

(f) The following exemptions apply:

1. The provisions of (b) above shall not apply to a stationary storage tank, if the tank is:

   i. Maintained under a controlled elevated temperature; or

   ii. Equipped with a vapor control system reducing by at least 98 percent the weight of VOC emissions to the outdoor atmosphere; or

   iii A pressurized storage tank designed to operate in excess of 15 pounds per square inch gauge (psig) without any emissions to the atmosphere except under emergency conditions.

2. Any of the following tanks shall be exempt from (q) below:

   i. Any fixed roof storage tank having a capacity of less than 40,000 gallons;

   ii. Any fixed roof storage tank less than 125,000 gallons whose contents has a vapor pressure of less than or equal to 2 psia at standard conditions; and

   iii. Any storage tank not in Range III equipped with a floating roof.

3. Any external floating roof tank in Range III that was in existence on (the day before the operative date of these amendments), and that is not degassed and emptied within 120 days after (the operative date of these amendments) shall be temporarily exempt from complying with (*l*)1i below if the operator has demonstrated to the Department that in order to properly bolt the covers for access hatches and gauge float wells, a flange or other comparable device must be welded to the fitting or other hot- work must be performed. The operator shall use equivalent means, such as clamping, to secure the covers during the interim period. However, the owner or operator must comply with (*l*)1i below the first time the tank is degassed and emptied after 120 days after (the operative date of these amendments).

4. Any external floating roof tank that contains more than 97 percent by volume crude oil or more than 97 percent by volume oily wastewater and/or slop oil regulated by an applicable 40 C.F.R. Part 60, Part 61, or Part 63 regulation, shall be exempt from xxxxx (*l*)4 below, but shall comply with all other applicable requirements of this subchapter.

5. Any floating-roof tank shall not be required to meet the gap seal requirements at (*l*)3i through x below while the roof is resting on its legs during the processes of draining, degassing or refilling the tank.

6. Any floating roof tank subject to a Federally enforceable condition limiting its annual in-service roof landing VOC emissions to less than five tons as calculated by AP-42, Chapter 7, may be exempt from (p) below, at the owner or operator's discretion, provided that the owner or operator shall maintain the records of these calculations pursuant to (s) below and the tank's Operating Permit or Preconstruction Permit, as applicable.

7. Any floating roof tank subject to a Federally enforceable condition in its Operating Permit or Preconstruction Permit, as applicable, limiting the vapor pressure of its contents to less than 1.5 psia at standard conditions, shall be exempt from (p) below only if the tank's records, maintained pursuant to (s)1 below, show that the vapor pressure of the tank's contents is less than 1.5 psia under standard conditions**.**

8. Any external floating roof tank in Range III that is subject to (*l*)1vi below shall be exempt from (*l*)10 below.

9. Any tank at (b) above is exempt from the vapor-tight condition at (d) above when gauging or sampling is taking place. In addition, a floating roof tank, is exempt from the vapor-tight condition at (d) above when the condition at (n)1 or (o)1 below, as applicable, below is met during refilling.

(g) (Reserved)

(h) No person shall cause, suffer, allow, or permit the storage of any VOC in any stationary storage tank in Range III as determined by Table 2A equipped with an external floating roof, unless any such storage tank containing a VOC having a vapor pressure of 1.0 pounds per square inch absolute (50 millimeters of mercury) or greater at standard conditions and having a maximum capacity of 20,000 gallons (75,700 liters) or greater is equipped with a primary and secondary rim seal system or equipment approved by the Department as being equally or more effective in preventing the emission of any VOC into the outdoor atmosphere. For the secondary seal, the gap area of gaps exceeding one-eighth inch (0.32 centimeters) in width between the seal and the tank wall shall not exceed 1.0 square inch per foot (6.5 square centimeters per 0.3 meters) of tank diameter. Any secondary seal shall be intact, with no visible holes, tears or other openings. The requirements of this subsection shall remain in effect for any such tank until the rim seal system requirements at (*l*)3 below become effective for that tank.

(i) (Reserved)

(j) Any delivery vessel that contains any applicable VOC and is located at a facility and is vented to the atmosphere for more than 30 consecutive days shall be considered a stationary storage tank for the purposes of this section.

(k) (Reserved)

(*l*) No person shall cause, suffer, allow, or permit the storage of any VOC in any stationary storage tank unless the provisions of this subsection are met.

1. The owner or operator of an external floating roof tank in Range III shall, no later than (120 days after the operative date of these amendments) or the first time the tank is emptied and degassed, whichever occurs first, if the tank was in existence on (the day before the operative date of these amendments), or on initial fill if the tank is constructed on or after (the operative date of these amendments): ***States without external floating roof tanks can state that all applicable tanks shall be equipped with domes or internal floating roofs, and transfer the deck fitting requirements, as appropriate, to l(5) (existing domed tanks) and l(7) (internal floating roof tanks).***

   i. Equip each access hatch with a cover that is gasketed and bolted. Equip each gauge float well with a cover that is either gasketed and weighted or gasketed and bolted. The cover shall be closed at all times, with no visible gaps, except when the hatch or well must be opened for access;

   ii. Equip each gauge hatch/sample well with a cover that is gasketed. The cover shall be closed at all times, with no visible gaps, except when the hatch or well must be opened for access;

   iii. Gasket, cap, or cover each adjustable roof leg with a VOC impervious sock at all times when the roof is floating;

   iv. Gasket each rim vent. Rim vents shall be closed at all times, with no visible gaps, when the roof is floating; and shall be set to open only when the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting;

   v. Gasket each vacuum breaker. Vacuum breakers shall be closed at all times, with no visible gaps, when the roof is floating; and shall be set to open only when the roof is being floated off or is being landed on the roof leg supports;

   vi. Equip each open floating roof drain with a slotted membrane fabric cover or other device with an equivalent control efficiency that covers at least 90 percent of the area of the opening. The fabric cover shall be impermeable if the liquid is drained into the contents of the tank;

   vii. Equip each unslotted guidepole well with a gasketed sliding cover and a flexible fabric sleeve or pole wiper;

viii. Equip each unslotted guidepole with a gasketed cover at the top of the pole. The cover shall be closed at all times, with no visible gaps, except when gauging or sampling;

ix. Equip each slotted guidepole well with a gasketed sliding cover, a pole wiper and either a pole float in the guidepole or a pole sleeve in the guidepole well;;

x. Equip each slotted guidepole having a pole float with a pole float wiper or seal. The wiper or seal of the pole float shall be at or above the height of the pole wiper. Maintain the pole float in a condition such that it floats within the guidepole at all times except when it must be removed for sampling or when the tank is empty;

xi. For each slotted guidepole well having a pole sleeve, the pole sleeve shall extend into the stored liquid ;

xii. **(**Reserved)

xiii. Except for vacuum breakers and rim vents, ensure that each opening in the external floating roof shall provide a projection below the liquid surface; and

xiv. Except for vacuum breakers, rim vents, roof drains, and leg sleeves, equip all other openings in the roof with a gasketed cover or seal that is closed at all times, with no visible gaps, except when the cover or seal must be opened for access.

2. In lieu of complying with the requirement of no visible gap at (*l*)1i, ii, iv, v, viii, xi and xiv above, the owner or operator of an external floating roof tank in Range III may, no later than (120 days after the operative date of these amendments) if the tank was in existence on (the day before the operative date of these amendments), or on initial fill if the tank is constructed on or after (the operative date of these amendments), maintain all roof openings in a leak-free condition at all times except during preventive maintenance, repair, or inspection periods specified at (r) below. ***States without external floating roof tanks can omit l(2).***

3. The owner or operator of an external floating roof tank in Range III shall equip the tank with a rim seal system meeting the following requirements prior to the initial fill if the tank was constructed on or after (the operative date of these amendments), or prior to the date the tank is refilled after being degassed for the first time after (the operative date of these amendments), but no later than May 1 of the year 10 years after the operative date of these amendments if the tank was in existence on (the day before the operative date of these amendments): ***States without external floating roof tanks can state that all applicable tanks shall be equipped with domes or internal floating roofs, and transfer the seal requirements, as appropriate, to l(5) (existing domed tanks) and l(7) (internal floating roof tanks). In this case, the requirements would have to be revised to incorporate the exceptions for domed/internal***

floating roof tanks in l(5)ii and l(7)iv.

i. The primary seal shall be a mechanical shoe or liquid mounted;

ii. The secondary seal shall be rim mounted and shall not be attached to the primary seal;

iii. Gaps between the tank shell and the primary seal shall not exceed 1.3 centimeters (1/2 inch) for a cumulative length of 30 percent of the circumference of the tank, and 0.32 centimeters (1/8 inch) for 60 percent of the circumference of the tank. No gap between the tank shell and the primary seal shall exceed 3.8 centimeters (1-1/2 inches). No continuous gap between the tank shell and the primary seal greater than 0.32 centimeters (1/8 inch) shall exceed 10 percent of the circumference of the tank;

iv. Gaps between the tank shell and the secondary seal shall not exceed 0.32 centimeters (1/8 inch) for a cumulative length of 95 percent of the circumference of the tank. No gap between the tank shell and the secondary seal shall exceed 1.3 centimeters (1/2 inch);

v. Mechanical shoe primary seals shall be installed so that one end of the shoe extends into the stored organic liquid and the other end extends a minimum vertical distance of 61 centimeters (24 inches) above the stored organic liquid surface;

vi. The geometry of the shoe shall be such that the maximum gap between the shoe and the tank shell is no greater than doubled the gap allowed by the seal gap criteria specified in (*l*)3iii above for a length of at least 46 centimeters (18 inches) in the vertical plane above the liquid surface;

vii. The primary seal envelope shall be made available for unobstructed inspection by the Department, upon request, along its circumference. In the case of riveted tanks with resilient filled primary seals, at least eight such locations shall be made available; for all other types of seals, at least four such locations shall be made available. If the Department deems it necessary, further unobstructed inspection of the primary seal may be required to determine the seal's condition along its entire circumference;

viii. The secondary seal shall be installed in a way that permits probes up to 3.8 centimeters (1-1/2 inches) in width to be inserted to measure gaps in the primary seal;

ix. There shall be no holes, tears or openings in the secondary seal or in the primary seal envelope surrounding the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal; and

x. Except during preventive maintenance, repair, or inspection periods specified at

(r) below that do not exceed 72 hours, both the primary seal and the secondary seal shall cover the annular space between the floating roof and the wall of the storage tank in a continuous fashion, as required at (*l*)3iii and iv above.

4. If an external floating roof tank in Range III stores any VOC with vapor pressure three pounds per square inch absolute or greater at standard conditions, the tank shall be equipped with a domed roof before the tank is refilled after the first time the tank is degassed after (the operative date of these amendments), but no later than ten years after the operative date of these amendments if the tank was in existence on (the day before the operative date of these amendments), or on initial fill if the tank is constructed on or after (the operative date of these amendments). ***States without external floating roof tanks can state that all applicable tanks shall be equipped with domes or internal floating roofs, and omit l(4).***

5. The owner or operator of a domed external floating roof tank in Range III that is already in operation as of (the operative date of these amendments) shall, prior to the date the tank is refilled after being degassed the first time after (the operative date of these amendments), but no later than ten years after the operative date of these amendments:

i. Equip and maintain roof openings according to the specifications at (*l*)1 or 2 above, except that a gauge hatch/sample well may be equipped with a slit-fabric seal or similar device that covers at least 90% of the opening, in lieu of the gasketed cover specified at (*l*)1ii and, in lieu of gasketing, capping, or covering each roof leg as required at (*l*)1iii, the owner or operator may suspend the floating roof from the fixed or domed roof using cables and eliminate the roof leg penetrations in the floating roof ;

ii. Equip the tank with a rim seal system consisting of either

(1) A liquid-mounted primary seal meeting the requirements for primary seals at (*l*)3iii, vii, and x above and having no tears or openings, or

(2) A primary and a secondary seal meeting the requirements at (*l*)3 i through x above, including compliance dates, except that:

(A) A mechanical shoe primary seal required at (*l*)3v above shall have one end extend a minimum vertical distance of 15 centimeters (six inches) above the stored organic liquid surface and the other end extend into the liquid a minimum of 10 centimeters (four inches) instead of meeting the requirement at (*l*)3v above; and

(B) A vapor-mounted wiper primary seal may be used on a tank with a shell that has riveted or lap-welded horizontal seams instead of the liquid mounted or mechanical shoe primary seal required at (*l*)3i above; and

iii. Ensure that the concentration of organic vapor in the vapor space above the domed external floating roof does not exceed 30 percent of its lower explosive limit.

6. If, on or after (the operative date of these amendments), the owner or operator adds a domed roof to an external floating roof tank in Range III, at the time the owner or operator adds the domed roof the owner or operator shall:

i. Equip and maintain roof openings according to the specifications at (*l*)1 or 2 above, except that a gauge hatch/sample well may be equipped with a slit-fabric seal or similar device that covers at least 90% of the opening, in lieu of the gasketed cover specified at (*l*)1ii and, in lieu of gasketing, capping, or covering each roof leg as required at (*l*)1iii, the owner or operator may suspend the floating roof from the fixed or domed roof using cables and eliminate the roof leg penetrations in the floating roof ; and

ii. Ensure that the concentration of organic vapor in the vapor space above the domed external floating roof does not exceed 30 percent of its lower explosive limit.

7. On or before the date an internal floating roof tank in Range III is refilled after being degassed for the first time after (the operative date of these amendments), but no later than ten years after the operative date of these amendments, if the tank was in existence on (the day before the operative date of these amendments), or on initial fill if the tank is constructed on or after (the operative date of these amendments) the owner or operator of the tank shall:

i. Equip each fixed roof support column and well with a sliding cover that is gasketed or with flexible fabric sleeves;

ii. Equip each ladder well with a gasketed cover. The cover shall be closed at all times, with no visible gaps, except when the well must be opened for access;

iii. Equip and maintain roof openings according to the specifications at (*l*)1 or 2 above, except that a gauge hatch/sample well may be equipped with a slit-fabric seal or similar device that covers at least 90% of the opening, in lieu of the gasketed cover specified at (*l*)1ii and, in lieu of gasketing, capping, or covering each roof leg as required at (*l*)1iii, the owner or operator may suspend the floating roof from the fixed or domed roof using cables and eliminate the roof leg penetrations in the floating roof ;

iv. Equip the tank with a rim seal system consisting of either

(1) A liquid-mounted primary seal meeting the requirements for primary seals at (*l*)3iii, vii, and x above and having no tears or openings, or

(2) A primary and a secondary seal meeting the requirements at (*l*)3 i through x above, including compliance dates, except that:

(A) A mechanical shoe primary seal required at (*l*)3v above shall have one end extend a minimum vertical distance of 15 centimeters (six inches) above the stored organic liquid surface and the other end extend into the liquid a minimum of 10 centimeters (four inches) instead of meeting the requirement at (*l*)3v above; and

(B) A vapor-mounted wiper primary seal may be used on a tank with a shell that has riveted or lap-welded horizontal seams instead of the liquid mounted or mechanical shoe primary seal required at (*l)*3i above;

v. For an internal floating roof installed prior to July 23, 1984, ensure that the concentration of organic vapor in the vapor space above the internal floating roof shall not exceed 50 percent of its lower explosive limit; and

vi. For an internal floating roof installed after July 23, 1984, ensure that the concentration of organic vapor in the vapor space above the internal floating roof shall not exceed 30 percent of its lower explosive limit.

8. By (ten years after the operative date of these amendments) if a Range III fixed-roof tank without an internal floating roof was in existence on (the day before the operative date of these amendments), or by the initial fill if a tank is constructed on or after (the operative date of these amendments), and if the fixed roof tank has a capacity of 40,000 gallons or greater storing any VOC with a vapor pressure of 0.5 pounds per square inch absolute or greater at standard conditions, the owner or operator shall:

i. Equip any gauging or sampling device on the tank with a leak-free cover which shall be closed at all times, with no visible gaps, except during gauging or sampling;

ii. Maintain the fixed roof in a leak-free condition with no holes, tears or uncovered openings; and

iii. Install and maintain each roof opening in a leak-free condition at all times except when the cover must be open for access or, for vents, when required to be open to relieve excess pressure or vacuum, in accordance with the manufacturer's design.

9. No person shall cause, suffer, allow, or permit the storage of any VOC in any stationary storage tank not in Range III as determined by Table 2A equipped with an external floating roof, unless any such storage tank containing a VOC having a vapor pressure of 1.0 pounds per square inch absolute (50 millimeters of mercury) or greater at standard conditions and having a maximum capacity of 20,000 gallons (75,700 liters) or greater is

equipped with a double rim seal combination or equipment approved by the Department as being equally or more effective in preventing the emission of any VOC into the outdoor atmosphere. For the secondary seal, the gap area of gaps exceeding one-eighth inch (0.32 centimeters) in width between the seal and the tank wall shall not exceed 1.0 square inch per foot (6.5 square centimeters per 0.3 meters) of tank diameter. Any secondary seal shall be intact, with no visible holes, tears or other openings. ***States without external floating roof tanks can state that all applicable tanks shall be equipped with domes or internal floating roofs and omit l(9)***

10. No person shall cause, suffer, allow, or permit the storage of any VOC in any stationary storage tank equipped with an external floating roof unless all openings in such roof, excluding emergency roof drains, are covered when not in active use. The tank shall be exempt from this paragraph if the tank meets the exemption criteria at (f)8 above. ***States without external floating roof tanks can state that all applicable tanks shall be equipped with domes or internal floating roofs and omit l(10).***

(m) If a tank is equipped with an external or internal floating roof, the roof shall float on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled.

(n) When performing a roof landing of an external floating roof tank: ***States without external floating roof tanks can state that all applicable tanks shall be equipped with domes or internal floating roofs and omit (n)***

1. When the roof is resting on the leg supports or suspended by cables or hangers, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible; and

2. Any in-service roof landing shall be with the landed height of the floating roof at its minimum setting.

(o) When performing a roof landing of an internal floating roof tank:

1. When the roof is resting on its leg supports or suspended by cables or hangers, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible; and

2. After the tank is refilled after being degassed for the first time after the operative date of these amendments, any in-service roof landing shall be with the landed height of the floating roof at its minimum setting.

(p) The owner or operator of any floating roof tank, not exempt pursuant to (f)6 or (f)7 above, used to store a VOC shall:

1. Submit a complete facility-wide tank VOC control plan to the Department for approval at the address listed at (v) below as follows:

   i. For any floating roof tank not exempt pursuant to (f)6 above, and existing as of (the operative date of these amendments), submit to the Department in writing the complete facility-wide tank VOC control plan by December 1, 2009; or

ii. For any new tank, excluding a tank exempt pursuant to (f)6 above, added to a facility, submit to the Department in writing a new or updated complete facility-wide tank VOC control plan by 120 days after the installation of the newly constructed tank(s);

2. Include in the facility-wide tank VOC control plan, for all floating roof tanks, except those floating roof tanks exempt pursuant to (f)6 above, the information in (p)2i and ii below or (p)2i and iii below, as applicable:

i. A list of each tank at the facility and the following for each tank:

(1) The tank type;

(2) The tank volume;

(3) The tank diameter;

(4) The tank contents;

(5) The permit number;

(6) Any other identifying numbers; and

(7) The scheduled date of the next internal tank inspection.

ii. A schedule to implement one or more of the following emission controls, which must be implemented by (10 years after the operative date of these amendments). This schedule shall be consistent with the facility's schedule for tank removal from service for normal inspection and maintenance and with the facility's schedule for the installation of any new tank(s):

(1) A tank configuration such that the bottom of the roof deck can be lowered to one foot or less from the top-most point of the surface of the tank floor;

(2) A method that routes all vapors from the tank to a vapor control device with a control efficiency of at least 90 percent, from the time the roof is landed (the cessassion of liquid withdrawal from the tank) until it is within 10 percent by volume of being refloated during refill; or

(3) Other measures approved by the Department as being equally or more effective in preventing VOC emissions to the outdoor atmosphere.

iii. An emissions averaging plan to operate all Range III floating roof tanks that store gasoline, except those tanks exempt pursuant to (f)6 above, such that their average annual in-service roof landing VOC emissions, as calculated in accordance with Chapter 7.1.3.2.2 "Roof Landings" of AP-42, as supplemented or amended and incorporated herein by reference, or as calculated using another method approved by the Department in accordance with (v) below, and after

applying any applicable control efficiencies, is less than:

(1) Five tons per tank per calendar year from the first through the third years after the operative date of these amendments;

(2) Four tons per tank per calendar year from the fourth through the sixth years after the operative date of these amendments;

(3) Three tons per tank per calendar year from the seventh through the ninth years after the operative date of these amendments; and

(4) Two tons per tank per calendar year in the tenth and subsequent years after the operative date of these amendments.

(q) On and after ten years after the operative date of these amendments**,** any part of a degassing and cleaning operation of a stationary storage tank performed during the period May 1 through September 30 shall be performed only as follows:

1. The owner or operator shall degas a tank storing a VOC with a vapor pressure equal to or greater than 0.5 psia at standard conditions as follows:

i. Empty the tank of the VOC liquid;

ii. Minimize VOC vapors in the tank vapor space by one of the following methods:

(1) Exhaust VOCs contained in the tank vapor space to a vapor control system rated at a minimum 95 percent efficiency until the organic vapor concentration is 5,000 parts per million by volume (ppmv) or less as methane, or is 10 percent or less of the lower explosive limit, whichever is less;

(2) Displace VOCs contained in the tank vapor space to a vapor control system rated at a minimum 95 percent efficiency by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia;

(3) If the tank is a free-water knockout tank, a person may degas the tank vapor space by restricting the outflow of water and floating off the oilpad, such that at least 90 percent of the tank volume is displaced; or

(4) Using other measures approved by the Department as being equally or more effective in preventing VOC emissions to the outdoor atmosphere.

iii. Discharge or displace the VOC vapors contained in the tank vapor space to a vapor control system that is vapor-tight and free of liquid leaks; and

iv. As appropriate, temporarily remove for no longer than one hour, a suitable tank fitting, such as a manway, to facilitate connection to an external vapor control system.

2. The owner or operator shall clean a tank storing a VOC with vapor pressure equal to or greater than 0.5 psia at standard conditions only if:

i. At least one of the following cleaning agents is used:

(1) Diesel fuel;

(2) A solvent with an initial boiling point of greater than 302 degrees Fahrenheit;

(3) A solvent with a vapor pressure less than 0.5 psia;

(4) A solvent with 50 grams per liter VOC content or less; or

(5) Some other Department-approved cleaning agent; or

ii. Steam cleaning is performed.

3. The owner or operator shall control emissions from the sludge removed from a tank that stores a VOC with a vapor pressure equal to or greater than 1.5 psia at standard conditions by:

i. During sludge removal, controlling emissions from the receiving vessel by operating a vapor control system that reduces VOC emissions by at least 95 percent;

ii. Transporting removed sludge in containers that are vapor-tight and free of liquid leaks; and

iii. Storing removed sludge, until final disposal, in containers that are vapor-tight and free of liquid leaks, or in tanks that comply with (b) above.

(r) The owner or operator of a VOC stationary storage tank in Range III shall have an inspection performed by an authorized inspector and maintain the tank as follows:

1. The findings of any tank inspection, whether completed or not, shall be recorded on the Inspection Form at xxxx Appendix II, incorporated herein by reference, in accordance with the rule's requirements. If an inspection is stopped before completion, indicate the reason for this action in section J "Comments" of the Inspection Form;

2. During the inspection, the authorized inspector performing the inspection must have a copy of the relevant portions of the Preconstruction Permit or the Operating Permit pertinent to the tank being inspected. The authorized inspector shall compare the permit to the existing tank and actual operating conditions of the tank. The authorized

inspector shall record any discrepancies between the permit equipment description and the existing tank, or the permit conditions and the actual operating conditions of the tank, as verified during an inspection, in section J "Comments" of the Inspection Form;

3. Annually inspect the ground level periphery of each tank for possible leaks in the tank shell. Complete section D "Ground Level Inspection" of the Inspection Form;

4. Annually complete all necessary calculations and record all required data accordingly in the Inspection Form and Fugitive Emissions Form at xxxx Appendix II;

5. For an external floating roof tank in Range III, demonstrate compliance with (*l*)1 through 3 above, as applicable, by: ***States without external floating roof tanks can omit state that all applicable tanks shall be equipped with domes or internal floating roofs, move the requirements of r(5)iii and r(5)iv to r(6) (section on existing domed external floating roof tanks), and omit r(5)***

   i. Annually, from the platform, visually inspecting the roof to check for permit and rule violations, and visually checking the roof for stored liquid on top of the roof, unsealed roof legs, open hatches, open emergency roof drains, or open vacuum breakers. Indicate presence of any tears in the fabric of the visible seal. Record the findings under section F of the Inspection Form;

   ii. Annually, inspecting the deck fittings for visible gaps using the 1/8 inch probes, or inspecting the deck fittings for a leak-free condition using EPA Method 21 set forth at 40 CFR Part 60 Appendix A, as supplemented or amended and incorporated herein by reference or, instead of EPA Method 21, using another method approved by the Department. Record any leaks above 500 ppm in the Fugitive Emissions Form;

   iii. Annually, inspecting the entire secondary seal for the gap requirements at (*l*)3iv above using the 1/8 inch, 1/2 inch , and 1-1/2 inch probes. Record the gap data in section F(4) of the Inspection Form. Record all cumulative gaps between 1/8 inch and 1/2 inch, between 1/2 inch and 1-1/2 inch, and in excess of 1-1/2 inches, in section G of the Inspection Form. Measure all secondary seal gaps greater than 1/2 inch for length and width, and record in section J "Comments" of the Inspection Form; and

   iv. Every five years and each time the tank is degassed, inspecting the entire primary seal for the gap requirements at (*l*)3iii above using the 1/8 inch, 1/2 inch and 1-1/2 inch probes. The primary seal shall be inspected by holding back the secondary seal. Record the gap data in section F(5) of the Inspection Form. Record all cumulative gaps between 1/8 inch and 1/2 inch; between 1/2 inch and 1-1/2 inch; and in excess of 1-1/2 inches, in section G of the Inspection Form;

6. For a domed external floating roof tank in Range III existing as of the operative date of these new rules, demonstrate compliance with (*l*)5 above, by:

i. Annually, using an explosimeter, by measuring the organic vapor concentration in the vapor space above the floating roof in terms of the lower explosive limit (LEL), and recording the reading in section E of the Inspection Form;

ii. Annually, from an opening in the domed or fixed roof, visually inspecting the roof to check for permit and rule violations, and visually checking the roof for stored liquid on top of the roof, unsealed roof legs, open hatches, open emergency roof drains, or open vacuum breakers. Indicate presence of any tears in the fabric of the visible seal. Record the findings under section F of the Inspection Form; and

iii. Each time the tank is degassed, but no less than once every 10 years, performing the requirements at (r)5ii (excluding EPA Method 21), iii and iv above;

7. For a domed external floating roof tank in Range III that had a dome installed after the operative date of these new rules, demonstrate compliance with (*l*)6 above, by performing the requirements at (r)6 above; ***States without external floating roof tanks can state that all applicable tanks shall be equipped with domes or internal floating roofs and omit r(7)***

8. For an internal floating roof tank in Range III, demonstrate compliance with (*l*) above, by performing the requirements at (r)6 above;

9. For a fixed roof tank in Range III that is subject to (*l*)8 above, annually demonstrate compliance with (*l*)9 above by inspecting the fittings located on the roof, piping, pressure relief valves and all other valves, to ensure they are leak-free using EPA Method 21 set forth at 40 CFR Part 60 Appendix A incorporated herein by reference, or using another method approved by the Department. Record any readings in excess of 500 ppm in the Fugitive Emissions Form;

10. The owner or operator of any VOC stationary storage tank in Range III shall repair or replace any piping, valve, vent, seal, gasket, or cover of a roof opening that:

i. Is defective;

ii. Has a visible gap or is not leak-free; or

iii. Does not meet any applicable requirement of this section; and

11. The owner or operator of a VOC stationary storage tank in Range III shall perform the repair or replacement at (r)10 above:

i. If the tank is already degassed, prior to filling; or

ii. If the tank is not degassed, within 45 days after discovery of the needed repair or replacement. If a repair cannot be completed and the vessel cannot be emptied within 45 days, the owner or operator may use up to two extensions of up to 30 additional days each. Documentation of the owner or operator's decision to use

an extension shall include a description of the failure, shall document that alternative storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be completely emptied as soon as practicable.

(s) The owner or operator shall maintain on-site, for each tank, for the time period specified at xxxx, unless another time period is specified below:

1. Records that specify each VOC stored and the vapor pressure of each VOC at standard conditions;

2. For the owner or operator of a floating roof tank, records of the roof landing emission information required at (EMISSION STATEMENT RULE);

3. If the owner or operator of a floating roof tank has not implemented all control measures pursuant to the tank VOC control plan submitted pursuant to (p) above, or if a floating roof tank is exempt pursuant to (f)6 above, the records of each floating roof landing event including, but not limited to, tank contents before landing and after refilling; landed height of the floating roof; height of any liquid remaining in the bottom of the tank after landing; duration of landing; landing emissions calculated using AP-42, Chapter 7 methodology, and any other records needed to create the "Floating Roof Landing Emission Summary Report" required at (EMISSION STATEMENT RULE);

4. Records relating to the installation of vapor control devices described at (t) below;

5. For the lifetime of the tank, all inspection reports required pursuant to (r) above;

6. Records of all tank degassing, cleaning and sludge removal activities performed pursuant to (q) above; and

7. Reserved.

8. Repair and replacement documentation required at (r)11ii above.

(t) On and after (the operative date of these amendments), the owner or operator of any floating roof stationary storage tank that installs a vapor control device in accordance with (p)2ii above shall record operating parameters as follows:

1. For a thermal oxidizer, the owner or operator shall record the following on a continuous basis or at a frequency approved by the Department:

   i. The operating temperature at the exit of the combustion chamber;

   ii. The carbon monoxide concentration in the flue gas emitted to the outdoor atmosphere; and

   iii. Upon request of the Department, any other operating parameter relevant to the prevention or control of air contaminant emissions from the tank or the oxidizer;

2. For a vapor control system that uses carbon or other adsorptive material, the owner or operator shall record the following on a continuous basis or at a frequency approved in writing by the Department:

i. The concentration of the total applicable VOCs in the gas emitted to the outdoor atmosphere; or

ii. Provided that the owner or operator confirms daily that the automatic switching between carbon beds is functioning in accordance with permit conditions, the date of carbon bed replacement; and, upon request of the Department, any other operating parameter relevant to the prevention or control of air contaminant emissions from the tank or the adsorber; and

3. For any other vapor control device, upon request of the Department, any operating parameter relevant to the prevention or control of air contaminant emissions from the tank or that vapor control device.

(u) If, during an inspection required at (r) above, or at any other time, the owner or operator determines that a tank does not comply with (*l*) above, the owner or operator shall submit a written report to the Department including the cause of the inspection failure, corrective actions to achieve compliance and measures taken to prevent a re-occurrence of the inspection failure. If the facility has an operating permit, in accordance with xxxx, the owner or operator shall include this report as part of the periodic compliance reports required at xxxx. If the facility does not have an operating permit, the owner or operator shall submit this report to the Department within three business days after becoming aware of the non-compliance.

(v) An owner or operator that seeks Department approval for an alternate method for calculating a tank's roof landing emissions pursuant to (p)2iii above shall:

1. Prepare an application that includes:

i. A description of the proposed alternate method;

ii. The parameters in the alternate method; and

iii. Supporting documentation that justifies the use of the alternate method; and

2. Submit a complete application in writing to the Department at:

xxxx,
xxxx
xxxx
xxxx
xxxx
xxxx

APPENDIX
XXXX

INSPECTIONS

Equipment Needed:

Organic Vapor Analyzer (OVA) calibrated with methane in accordance with EPA Method 21, as supplemented or amended and incorporated herein by reference; explosimeter calibrated with methane (for internal floating roof tanks); liquid resistant measuring tape or device; tank probe (to measure gaps in tank seals - 1/8 inch, 1/2 inch, 1-1/2 inch); explosivity meter; flashlight.

Inspection Procedures (Model rule.2(r)):

A. Any inspection shall be performed by an authorized inspector.

B. The findings of any tank inspection, whether completed or not, shall be recorded on the Inspection Form at Model Rule, Appendix , prescribed by the Department in accordance with the rule's requirements. If an inspection is stopped before completion, indicate the reason for this action in section J “Comments” of the Inspection Form.

C. During the inspection, the person(s) conducting the inspection must have a copy of the relevant portions of the Preconstruction Permit or the Operating Permit pertinent to the tank being inspected. Any discrepancies between the permit equipment description and the existing tank or the permit conditions and the actual operating conditions of the tank as verified during an inspection must be recorded in section J “Comments” of the Inspection Form.

D. Inspect the ground level periphery of each tank for possible leaks in the tank shell. Complete section D “Ground Level Inspection” of the Inspection Form.

E. For external floating roof tanks: ***States without external floating roof tanks can state that all applicable tanks shall be equipped with domes or internal floating roofs and omit E***

1. From the platform, visually inspect the roof and check for permit or rule violations. Record the information as shown under section F of the Inspection Form.

2. During visual inspection of the roof, check for stored liquid on top of the roof, unsealed roof legs, open hatches, open emergency roof drains or vacuum breakers and record the findings on the Inspection Form accordingly. Indicate presence of any tears in the fabric of both seals.

3. Inspect the roof fittings using the 1/8 inch probes or conduct a EPA Method 21 inspection, as supplemented or amended and incorporated herein by reference, of the roof fittings for a leak-free condition. Record any leaks above 500 ppm in the Fugitive Emissions Form.

4. Inspect the entire secondary seal using the 1/8 inch and 1/2 inch probes. Record the gap data in section F(4) of the Inspection Form.

5. When required (which is every five years), inspect the entire primary seal using the 1/8 inch, 1/2 inch, and 1-1/2 inch probes. Inspect the primary seal by holding back the secondary seal. Record the gap data in section F(5) of the Inspection Form.

6. Record all cumulative gaps between 1/8 inch and 1/2 inch; between 1/2 inch and 1-1/2 inch; and in excess of 1-1/2 inches, for both primary and secondary seals in section G of the Inspection Form. Secondary seal gaps greater than 1/2 inch should be measured for length and width, and recorded in section J "Comments" of the Inspection Form.

F. For internal floating roof and domed tanks:

1. Using an explosimeter, measure the concentration of the vapor space above the internal floating roof in terms of lower explosive limit (LEL), and record the reading in section E of the Inspection Form.

2. Visually inspect the deck fittings and the visible seal of the rim seal system, and record findings in section E of the Inspection Form.

3. Conduct gap measurements of the deck fittings and rim seal system each time the tank is emptied and degassed but no less than once every 10 years.

G. For fixed roof tanks:

1. Inspect the pressure relief valves, piping, valves and fittings located on the roof for leak-free condition. Record any readings in excess of 500 ppm in the Fugitive Emissions Form.

H. Complete all necessary calculations and record all required data accordingly in the Inspection Form and Fugitive Emissions Form.

INSPECTION FORM

PLEASE COMPLETE FORM LEGIBLY IN BLACK INK

Program Interest No. _____ Permit Activity No. _____ Tank ID No. E _____

Inspection Date _____ Time_____

Is this a Follow-up Inspection? No ☐ Yes ☐ If yes, Date of Previous Inspection _____

A. COMPANY INFORMATION:

Company Name _____

Location Address _____ City _____ Zip _____

Mailing Address _____ City _____ Zip _____

Contact Person _____ Title _____

Phone _____

B. INSPECTION CONDUCTED BY:

Name _____ Title _____

Company Name _____ Phone _____

Mailing Address _____ City _____ Zip _____

C. TANK INFORMATION:

Capacity _____ (gals) Installation Date _____ Tank Diameter _____ (ft) Tank Height _____ (ft)

Product Type _____ Product Vapor Pressure _____ (psia)

Type of Tank: Riveted ☐ Welded ☐ Other ☐(describe) _____

Color of Shell _____ Color of Roof _____

Roof Type: Pontoon ☐ Double Deck ☐ Other ☐(describe) _____

External floating roof ☐ Internal floating roof or domed tank ☐

D. GROUND LEVEL INSPECTION:

1) Product Temperature _____ ° F 2) Product level _____ (ft)

3) List type and location of leaks found in tank shell.

_____

4) List any discrepancies between the existing equipment and the equipment description on the Permit.

_____

5) Is tank in compliance with Permit conditions? No ☐ Yes ☐ If no, explain _____

_____

_____

E. INTERNAL FLOATING ROOF OR DOMED TANK:

1) Check vapor space between floating roof and fixed roof with explosimeter. _____Percent LEL.

2) Conduct visual inspection of roofs and the visible seal of the rim seal system.

3) Are all roof openings covered? No ☐ Yes ☐ If no, explain in Comments section (J) and proceed to part (H)(6).

F. EXTERNAL FLOATING ROOF TANK (or DOMED TANK AND INTERNAL FLOATING ROOF TANK when needed)

1) On the diagram (below) indicate the location of the ladder, roof drain(s), anti-rotation device(s), platform, gauge well, and vents or other appurtenances. *Note information in relation to North (to the top of the worksheet)*.

2) Describe any uncovered openings found on the roof in the Comments section (J).

3) Identify any tears in the seal fabric. Describe and indicate on diagram (below):

4) Secondary Seal Inspection

a. Type of Secondary Seal: _____

b. Does 1/2" probe drop past seal? No ☐ Yes ☐ If yes, measure length(s) and show on diagram.

c. Does 1/8" probe drop past seal? No ☐ Yes ☐ If yes, measure length(s) and show on diagram.

d. Record dimensions of gap for gaps

> 1/8" _____

> 1/2" _____

NOTE: Record the actual width and cumulative length of gaps in feet and inches. (Do not include gaps > 1/2" in 1/8" measurements)

5) Primary Seal Inspection

a) Type of Primary Seal: ☐ Shoe; ☐ Tube; ☐ Other _____

b) Shoe seal: Does 1-1/2" probe drop past seal? No ☐ Yes ☐ If yes, measure length(s) and show on diagram.

c) Shoe seal: Does 1/2" probe drop past seal? No ☐ Yes ☐ If yes, measure length(s) and show on diagram.

d) Tube seal: Does 1/2" probe drop past seal? No ☐ Yes ☐ If yes, measure length(s) and show on diagram.

e) All seal types: Does 1/8" probe drop past seal? No ☐ Yes ☐ If yes, measure length(s) and show on diagram.

f) Record dimensions of gaps for gaps

> 1/8" _____

> 1/2" _____

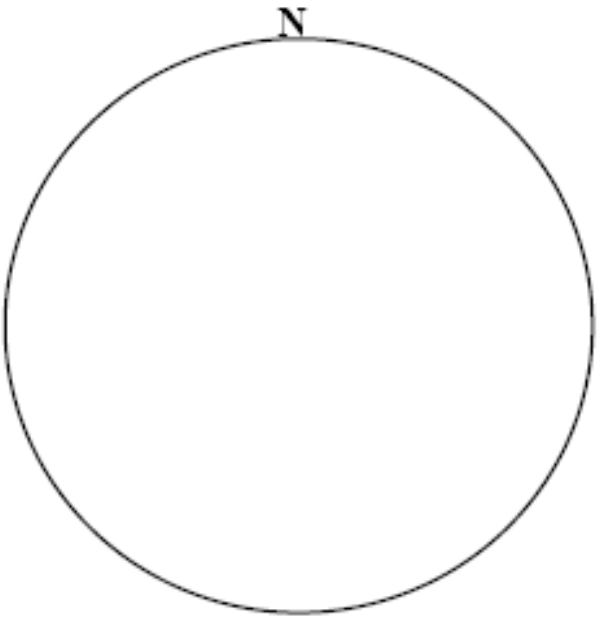
>1-1/2" _____

NOTE: Record the actual width and cumulative length of gaps in feet and inches. (Do not include gaps > 1/2" in 1/8" measurements, or gaps > 1-1/2" in 1/2" measurements)

6) Deck Fitting Inspection

(Circle one) Does 1/8" probe drop past gasket seal or does seal fail EPA Method 21? No ☐ Yes ☐ If yes, identify fitting.

NOTE: Show defects using symbols. Show seal gaps and lengths.



Legend	
Equipment	
AD	Antirotational device
GW	Gauge well
⊤	Leg stand
RD	Roof drain
*	Emergency roof drain
∞	Vacuum breaker
▲	Vent
PL	Platform & ladder
Defects	
LT	Leg top
╫	Leg pin
OH	Open hatch
V\	Torn seal
|-P-|	Primary seal gap
|-S-|	Secondary seal gap

IF INTERNAL FLOATING ROOF OR DOMED TANK, PROCEED TO PART H(6) WHEN APPROPRIATE:

G. CALCULATIONS - complete all applicable portions of the following:

Record dimensions of indicated gaps (from F(4)(d), F(5)(b), and F(5)(f)). Record in feet and inches.

Gaps in primary seal between 1/8 and 1/2 inch: _____

Gaps in primary seal between 1/2 and 1-1/2 inch: _____

Gaps in primary seal greater than 1-1/2 inches: _____

Gaps in secondary seal between 1/8 and 1/2 inch: _____

Gaps in secondary seal greater than 1/2 inch: _____

Multiply diameter (ft) of tank to determine appropriate gap limits:

5 percent circumference = diameter X 0.157 = ____60 percent circ. = diam. X 1.88 = _____

10 percent circumference = diameter X 0.314 = ____ 90 percent circ. = diam. X 2.83 = _____

30 percent circumference = diameter X 0.942 = ____95 percent circ. = diam. X 2.98 = _____

H. DETERMINE COMPLIANCE STATUS OF TANK:

1) Were any openings found on the roof? No ☐ Yes ☐

2) Were any tears in the seals found? No ☐ Yes ☐

3) Is the product level lower than the level at which the roof would be floating? No ☐ Yes ☐

4) Secondary Seal:

Did 1/2" probe drop between shell and seal? No ☐ Yes ☐

Did cumulative 1/8"- 1/2" gap exceed 95percent circumference length? No☐ Yes☐

5) Primary Seal:

Shoe: Did 1-1/2" probe drop between shell and seal? No ☐ Yes ☐

Did cumulative 1/2" - 1-1/2" gap exceed 30 percent circumference length, and

did cumulative 1/8 - 1/2" gap exceed 60 percent circumference length? No☐ Yes☐

Did any single continuous 1/8" - 1-1/2" gap exceed 10 percent circumference. length? No ☐ Yes ☐

Tube: Did 1/2" probe drop between shell and seal? No ☐ Yes ☐

Did cumulative 1/8"- 1/2" gap exceed 95 percent circumference length? No☐ Yes☐

6) Internal floating roof (installed before 6/1/84):

Did percent LEL exceed 50 percent? No ☐ Yes ☐

(installed after 6/1/84) or domed tank: Did percent LEL exceed 30 percent? No ☐ Yes ☐

7) Does tank have permit conditions? No ☐ Yes ☐

Does tank comply with these conditions? No ☐ Yes ☐

I. IF THE INSPECTION WAS TERMINATED PRIOR TO COMPLETION FOR ANY REASON, PLEASE EXPLAIN:

_____

_____

J. COMMENTS:

Use this section to complete answers to above listed items and to describe repairs made to the tank; include date and time repairs were made.

_____

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K. Certifications

“I certify under penalty of law that I believe the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment or both, for submitting false, inaccurate or incomplete information.”

Authorized inspector who completed the inspection:

_____Date: _____
(Signature)

Individual with Direct Knowledge:

_____Date: _____
(Signature of person with direct knowledge of, and responsibility for, the information on this form)

Model Rule.2(s) requires all inspection reports required pursuant to Model Rule.2(r) to be maintained on-site for the lifetime of the tank.

FUGITIVE EMISSIONS FORM

Company Information							
Program Interest No.							
Company Name							
Address							
Contact/Phone Number							
Permit Activity Number				Report Date			
Tank ID	Type	Fitting	Date	Leak Concen-tration	Type of Repair	Date	Post-Repair Leak Concen-tration

Model Rule.2(s) requires all inspection reports required pursuant to Model Rule.2(r) to be maintained on-site for the lifetime of the tank.