**DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT**

**Air Quality Control Commission**

# REGULATION NUMBER 7 CONTROL OF OZONE VIA OZONE PRECURSORS AND CONTROL OF HYDROCARBONS VIA OIL AND GAS EMISSIONS (EMISSIONS OF VOLATILE ORGANIC COMPOUNDS AND NITROGEN OXIDES)

**5 CCR 1001-9**

*[Editor's Notes follow the text of the rules at the end of this CCR Document.]*

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## I. Applicability

I.A.

I.A.1. The provisions of this regulation shall apply as follows:

I.A.1.a. All provisions of this regulation apply to the Denver 1-hour ozone attainment/maintenance area, to any nonattainment area for the 1-hour ozone standard, and to the 8-hour Ozone Control Area.

I.A.1.b. (State Only) All provisions of this regulation apply to any ozone nonattainment area, which includes areas designated nonattainment for either the 1-hour or 8-hour ozone standard, unless otherwise specified in Section I.A.1.c. Colorado's ozone nonattainment or attainment maintenance area maps and chronologies of attainment status are identified in Appendix A of this regulation.

I.A.1.c. The provisions of Sections V., VI.B.1. and 2., VII.C., XVII., and XVIII. apply statewide. The Provisions of Sections XVII., XVIII., and any other sections marked by (State Only) are not federally enforceable, unless otherwise identified.

I.A.2. REPEALED

I.A.3. REPEALED

I.B. Sources

I.B.1. New Sources

I.B.1.a. New sources, defined as any sources which either (1) submit a complete permit application on or after October 30, 1989, or (2) if no permit is required, commence operation on or after October 30, 1989, must comply with the provisions of this regulation upon commencement of operation.

~~I.B.1.b. (State Only) New sources are any sources which commenced construction on or after the date on which the area is first designated as being in nonattainment for ozone and are located in that area, or, if located in the 1-hour ozone nonattainment or attainment maintenance area, by October 30, 1989. New sources shall comply with the requirements of this regulation by whichever date comes later:~~

~~I.B.1.b.(i) (State Only) October 30, 1989, if they are located in what was previously designated as a 1-hour ozone nonattainment or attainment maintenance area;~~

~~I.B.1.b.(ii) (State Only) February 1, 2009, if they are located in an 8-Hour Ozone Control Area and outside of the 1-hour ozone nonattainment or attainment maintenance area; or~~

~~I.B.1.b.(iii) (State Only) Upon commencement of operation, if located within an ozone nonattainment or attainment maintenance area.~~

I.B.1.c. This Section I.B.1 does not apply to oil and gas operations subject to Section XII, stationary and portable engines subject to Section XVI, or natural gas actuated pneumatic controllers subject to Section XVIII.

I.B.2. Existing Sources

I.B.2.a. Existing sources are (1) those sources for which a complete permit application was submitted prior to October 30, 1989, or (2) those sources, which commenced operation prior to October 30, 1989.

~~I.B.2.b. (State Only) Existing sources are those sources which commenced construction prior to the date on which the area is first designated as being in nonattainment for ozone and are located in that area, or, if located in the 1-hour ozone nonattainment or attainment maintenance area, by October 30, 1989.~~

I.B.2.c. Existing sources shall not be required to comply with requirements of this regulation until on and after October 30, 1991. All existing sources shall comply with the requirements set forth in exhibit A, attached to this regulation, until October 30, 1991.

~~I.B.2.d. (State Only) Existing sources shall be required to comply with requirements of this regulation by whichever date comes later:~~

~~I.B.2.d.(i) (State Only) October 30, 1989, if they are located in what was previously designated as a 1-hour ozone nonattainment or attainment maintenance area;~~

~~I.B.2.d.(ii) (State Only) February 1, 2009, if they are located in an 8-hour Ozone Control Area and outside of the Denver 1-hour ozone nonattainment or attainment maintenance area; or~~

~~I.B.2.d.(iii) (State Only) the date on which the area is first designated as being in nonattainment for ozone, if located within that ozone nonattainment or attainment maintenance area.~~

I.B.2.e. On and after October 30, 1991, all existing sources shall comply with the requirements of this regulation, and exhibit A shall no longer be applicable.

I.B.2.f. On or before October 30, 1990, all existing sources located in what was previously designated as the 1-hour ozone nonattainment or attainment maintenance area shall submit to the Division a report containing the following:

I.B.2.f.(i) A list of sources of volatile organic compound emissions located at the stationary source. The list shall include a description, potential emissions, and actual emissions of each source.

I.B.2.f.(ii) Identification of each source subject to a Division Reasonably Available Control Technology (RACT) determination, and when a request for that determination will be made.

I.B.2.f.(iii) The owner or operator's expected RACT for each source and a description of how compliance will be achieved. If a source is subject to RACT requirements as stated in previous versions of this regulation, the report need only specify how compliance will be achieved for any revised provisions of the regulation.

I.B.2.g. On or before October 30, 1991, all existing sources shall update and submit the report required under Subparagraph b. above. The updated report shall describe in detail all actions taken to comply with the RACT requirements, and when those actions were taken.

I.B.2.h. This Section I.B.2 does not apply to oil and gas operations subject to Section XII, or stationary and portable engines subject to Section XVI.

I.C. Once a source subject to this regulation exceeds an applicable threshold limit, the requirements of this regulation are irrevocably effective unless the source obtains a federally enforceable permit limiting emissions to levels below the threshold limit by restricting production capacity or hours of operation.

I.D. The owner or operator of a source not required to obtain a permit by provisions of law other than this section may apply for and shall be required to accept a permit as a condition of avoiding RACT requirements. Such permits shall contain only those conditions necessary to ensure the enforcement of the production capacity or hours of operation.

I.E. Materials incorporated by reference in this regulation are available for public inspection during regular business hours at the Commission's Office at 4300 Cherry Creek Drive South, Denver, Colorado. The regulation incorporates the materials as they exist at the date of the promulgation of this regulation and does not include later amendments to or editions of the incorporated materials.

## II. General Provisions

II.A. Definitions

II.A.1. "8-Hour Ozone Control Area" means the Counties of Adams, Arapahoe, Boulder (includes part of Rocky Mountain National Park), Douglas, and Jefferson; the Cities and Counties of Denver and Broomfield; and the following portions of the Counties of Larimer and Weld:

II.A.1.a. For Larimer County (includes part of Rocky Mountain National Park), that portion of the county that lies south of a line described as follows: Beginning at a point on Larimer County's eastern boundary and Weld County's western boundary intersected by 40 degrees, 42 minutes, and 47.1 seconds north latitude, proceed west to a point defined by the intersection of 40 degrees, 42 minutes, 47.1 seconds north latitude and 105 degrees, 29 minutes, and 40.0 seconds west longitude, thence proceed south on 105 degrees, 29 minutes, 40.0 seconds west longitude to the intersection with 40 degrees, 33 minutes and 17.4 seconds north latitude, thence proceed west on 40 degrees, 33 minutes, 17.4 seconds north latitude until this line intersects Larimer County's western boundary and Grand County's eastern boundary.

II.A.1.b. For Weld County, that portion of the county that lies south of a line described as follows: Beginning at a point on Weld County's eastern boundary and Logan County's western boundary intersected by 40 degrees, 42 minutes, 47.1 seconds north latitude, proceed west on 40 degrees, 42 minutes, 47.1 seconds north latitude until this line intersects Weld County's western boundary and Larimer County's eastern boundary.

II.A.2. "Denver 1-Hour Ozone Attainment/Maintenance Area" means the Counties of Jefferson and Douglas, the Cities and Counties of Denver and Broomfield, Boulder County (excluding Rocky Mountain National Park), Adams County west of Kiowa Creek, and Arapahoe County west of Kiowa Creek.

II.A.3. "Capture System" means the equipment used to contain, capture, or transport a pollutant to a control device.

II.A.4. "Capture System Efficiency (vapor gathering system efficiency)" means the percent by weight of VOC emitted by an operation subject to this regulation, which is captured by the capture system and sent to the control device; i.e., (mass flow of VOC captured)/(mass flow of VOC emitted by the operation) x 100%.

II.A.5. "Carbon Adsorption System" means a device containing adsorbent material, an inlet and outlet for exhaust gases and a system to regenerate the saturated adsorbent.

II.A.6. "Condenser" means any heat transfer device used to liquefy vapors by removing their latent heats of vaporization. Such devices include, but are not limited to, shell and tube, coil, surface, or contact condensers.

II.A.7. "Control Device" means a carbon adsorber, refrigeration system, condenser, flare, firebox or other device, which will reduce the concentration of VOC in a gas stream by adsorption, combustion, condensation, or other means of removal.

II.A.8. "Control Device Efficiency" means the percent removal by weight of VOC by a control device; i.e., (mass flow of VOC into control device - mass flow of VOC out of control device)/(mass flow of VOC into control device) x 100%.

II.A.9. "Gasoline" means a petroleum distillate having a Reid vapor pressure between 208 and l040 torr (4-20 psi), which is used as fuel for internal combustion engines.

II.A.10. "Highly Volatile Organic Compound" is defined as a Volatile Organic Compound or mixture of such compounds with a true vapor pressure in excess of 570 torr (11 Psia) at 20 C.

II.A.11. "Organic Material" means a chemical compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

~~II.A.12. (State Only) "Ozone Nonattainment Area" means any area designated as not in attainment with the ozone National Ambient Air Quality Standard as determined by the Environmental Protection Agency.~~

II.A.13. "Petroleum Refinery" means any facility engaged in producing gasoline, aromatics, kerosene, distillate fuel oils, residual fuel oils, lubricants, asphalt, or other products through distillation of petroleum or through redistillation, cracking, rearrangement or reforming of unfinished petroleum derivatives.

II.A.14. "Reid Vapor Pressure" means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquefied petroleum gases as determined by the American Society for Testing and Materials, Part 17, 1973, D-323-72 (Reapproved 1977).

II.A.15. "True Vapor Pressure" means the equilibrium partial pressure exerted by petroleum (or other) liquid. This may be determined by the methods described in American Petroleum Institute Bulletin 2517, "Evaporation Loss from Floating Roof Tanks," 1962.

II.A.16. "Vapor Recovery System" means a system that prevents release to the atmosphere of organic compounds emitted during the operation of any transfer, storage, or processing equipment.

II.A.17. "Volatile Organic Compound (VOC)" means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, except those listed in Section II.B. as having negligible photochemical reactivity. VOC may be measured by a reference method, an equivalent method, an alternative method, or by procedures specified under 40 CFR Part 60. A reference method, an equivalent method, or an alternative method, however, may also measure nonreactive organic compounds. In such cases, an owner or operator may exclude the compounds listed in Section II.B. when determining compliance with a standard if the amount of such compounds is accurately quantified, and such exclusion is approved by the Division. As a precondition to excluding such compounds as VOC, or at any time thereafter, the Division may require an owner or operator to provide monitoring or testing methods and results demonstrating, to the satisfaction of the Division, the amount of negligible-reactive compounds in the source's emissions.

II.B. Exemptions

Emissions of the organic compounds listed as having negligible photochemical reactivity in the common provisions definition of Negligibly Reactive Volatile Organic Compound are exempt from the provisions of this regulation.

~~(State Only) Notwithstanding the foregoing exemption, hydrocarbon emissions from oil and gas operations, including methane and ethane, are subject to this regulation as set forth in Sections XVII. and XVIII.~~

II.C. General Emission Limitation

II.C.1. Existing Sources ~~(State Only: Located in any Ozone Nonattainment Area or Attainment Maintenance Area)~~

II.C.1.a.All existing sources shall comply with the requirements set forth in this regulation.

II.C.1.a.(i) Existing sources of VOC which are not subject to specific emission limitations set forth in this regulation, and which have the potential to emit 100 tons per year or more of VOC, shall utilize Reasonably Available Control Technology (RACT).

II.C.1.a.(ii) The potential to emit of such sources shall be based on design capacity or maximum production rate, whichever is greater, 8760 hours/year operation, and before add-on controls.

II.C.1.a.(iii) Owners or operators of such sources with potential emissions of 100 tons per year or more, but with actual emissions less than 100 tons per year may obtain a federally enforceable permit limiting emissions to actual rates by restricting production capacity or hours of operation, thus avoiding RACT requirements.

The owner or operator of a source not required to obtain a permit by provisions of law other than this section may apply for and shall be required to accept a permit as a condition of avoiding RACT requirements. Such permits shall contain only those conditions necessary to ensure the enforcement of the production capacity or hours of operation.

II.C.1.a.(iv) Such sources with potential emissions of 100 tons per year or more but with actual emissions of less than 50 tons per year, on a rolling 12-month total, may avoid RACT and permit requirements if the following requirements are met:

II.C.1.a.(iv)(A) The owner or operator shall submit revised Air Pollutant Emission Notices (APENs) by April 1 of each year, which demonstrate that the 50 tons per year threshold has not been exceeded.

II.C.1.a.(iv)(B) The owner or operator shall maintain records on site which include monthly VOC use and monthly VOC emissions. The records shall include calculation of total emissions for each rolling 12-month period. The records shall be made available to the Division for inspection upon request.

~~II.C.1.a.(v) (State Only) Existing sources that are modified – undergo any physical change, or changed in the method of operation of a stationary source which increase VOC or NOx emissions – on or after March 30, 2008, shall utilize RACT control technologies pursuant to Regulation Number 7 and Regulation Number 3, Part B, Section III.D.2. upon recommencing operation.~~

II.C.1.b. Provided however, that no existing source of VOC emissions employing emission controls on or within the six-month period preceding the effective date of this regulation may reduce its level of control of VOC emissions below that level of control actually achieved, even though such source may otherwise be subject to less stringent control requirements, except that no existing source shall be required to control emissions to an extent greater than that level of control which RACT would achieve.

~~II.C.1.c. (State Only) Existing sources with potential emissions equal to or greater than 100 tons per year of volatile organic compound emissions shall submit a permit modification application that includes a revised APEN (or APENs) and a RACT analysis, to the Division, as follows:~~

~~II.C.1.c.(i) (State Only) By October 30, 1991 if located in what was previously designated as the Denver 1-hour ozone nonattainment or attainment maintenance area; or~~

~~II.C.1.c.(ii) (State Only) By April 30, 2009 or within one year after the date on which the area is first designated as being in nonattainment for ozone, whichever comes later, if they are located in the 8-hour Ozone Control Area and outside of the Denver 1-hour ozone nonattainment or attainment maintenance area.~~

~~II.C.1.d. (State Only) Existing sources shall utilize RACT pursuant to Regulation Number 7 and Regulation Number 3, Part B, Section III.D.2.,by whichever date comes later:~~

~~II.C.1.d.(i) (State Only) October 30, 1991, if they are located in what was previously designated as the Denver 1-hour ozone nonattainment or attainment maintenance area;~~

~~II.C.1.d.(ii) (State Only) November 21, 2011, if they are located in the 8-hour Ozone Control Area, and outside of the Denver 1-hour ozone nonattainment or attainment maintenance area;~~

~~IIC.1.d.(iii) (State Only) Three years after the date on which the area is first designated as being in nonattainment for ozone; or~~

~~II.C. 1.d.(iv) (State Only) Two years after Division determination of case-by-case RACT pursuant to this Section II.C.1 . The Division shall be deemed to have approved the RACT analysis for purposes of this Section II.C.1.d.(iv) if it does not object after eighteen months from having received a complete permit application.~~

II.C.2. New Sources

All new sources shall utilize controls representing RACT, pursuant to Regulation Number 7 and Regulation Number 3, Part B, Section III.D., upon commencement of operation.

II.D. Alternative Control Plans and Test Methods

II.D.1. Sources subject to specific requirements of this regulation shall submit for approval as a revision to the State Implementation Plan:

II.D.1.a. Any alternative emission control plan or compliance method other than control options specifically allowed in the applicable regulation. Such alternative control plans shall provide control equal to or greater than the emission control or reduction required by the regulation, unless the source contends that the control level required by the regulation does not represent RACT for their specific source.

II.D.1.b. Any alternative test method or procedure not specifically allowed in the applicable regulation.

II.D.2. No alternative submitted pursuant to this Section II.D is effective until the alternative is approved as a revision to the State Implementation Plan.

~~II.E. REPEALED~~

~~II.F. Provisions for Specific Processes~~

~~II.F.1. The Gates Rubber Company Provision - REPEALED~~

**III. General Requirements for Storage and Transfer of Volatile Organic Compounds**

III.A. Maintenance and Operation of Storage Tanks and Related Equipment

All storage tank gauging devices, anti-rotation devices, accesses, seals, hatches, roof drainage systems, support structures, and pressure relief valves shall be maintained and operated to prevent detectable vapor loss except when opened, actuated, or used for necessary and proper activities (e.g. maintenance). Such opening, actuation, or use shall be limited so as to minimize vapor loss.

Detectable vapor loss shall be determined visually, by touch, by presence of odor, or using a portable hydrocarbon analyzer. When an analyzer is used, detectable vapor loss means a VOC concentration exceeding 10,000 ppm. Testing and monitoring shall be conducted as in Section VIII.C.3.

III.B. Transfer (excluding Petroleum Liquids)

Except as otherwise provided in this regulation, all volatile organic compounds transferred to any tank, container, or vehicle compartment with a capacity exceeding 212 liters (56 gallons), shall be transferred using submerged or bottom filling equipment. For top loading, the fill tube shall reach within six inches of the bottom of the tank compartment. For bottom-fill operations, the inlet shall be flush with the tank bottom.

III.C. Beer production and associated beer container storage and transfer operations involving volatile organic compounds with a true vapor pressure of less than 1.5 PSIA actual conditions are exempt from the provisions of Section III.B, above.

**IV. Storage of Highly Volatile Organic Compounds**

IV.A. Highly volatile organic compounds shall be stored:

IV.A.1. In a pressure tank which is at all times capable of maintaining working pressures sufficient to prevent vapor loss to the ambient air; or

IV.A.2. With methods and/or equipment approved by the Division in writing pursuant to the request of the person owning or operating the storage facility.

IV.B. Vapor loss shall be determined visually, by presence of frost or condensation at the point of leakage, or using a portable hydrocarbon analyzer. When an analyzer is used, vapor loss means a VOC concentration exceeding 10,000 ppm and testing and monitoring procedures shall be conducted as in Section VIII.C.3.

**V. Disposal of Volatile Organic Compounds**

V.A. No person shall dispose of volatile organic compounds by evaporation or spillage unless RACT is utilized.

V.B. No owner or operator of a bulk gasoline terminal, bulk gasoline plant, or gasoline dispensing facility as defined in Section VI.C.2., VI.C.3. and XV.A.3., shall permit gasoline to be intentionally spilled, discarded in sewers, stored in open containers, or disposed of in any other manner that would result in evaporation.

**VI. Storage and Transfer of Petroleum Liquid**

VI.A. General Requirements

VI.A.1. No person shall build, install, or permit the building or installation of any rotating pump or compressor handling any type of petroleum liquid unless said pump or compressor is equipped with mechanical seals or other equipment of equal efficiency. If reciprocating-type pumps and compressors are used, they shall be equipped with packing glands properly installed, in good working order, and properly maintained so that no detectable emissions occur from the drain recovery systems.

VI.A.2. Definitions

For the purpose of this section, the following definitions apply:

VI.A.2.a. Repealed.

VI.A.2.b. “Crude Oil” means a naturally occurring mixture which consists of hydrocarbons, sulfur, nitrogen or oxygen derivatives of hydrocarbons, and which is a liquid at standard conditions.

VI.A.2.c. “Custody Transfer” means the transfer of produced crude oil and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

VI.A.2.d. “EFR Tank” means a storage vessel having an external floating roof.

VI.A.2.e. "External Floating Roof" means a storage vessel cover in an open top tank consisting of a double deck or pontoon single deck which rests upon and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

VI.A.2.f. "Liquid-Mounted Seal" means a primary seal mounted in continuous contact with the contained liquid and which occupies an annular space between the inner tank wall and the perimeter of the floating roof.

VI.A.2.g. "Petroleum Liquid" means crude oil, condensate and any finished or intermediate product manufactured or extracted in a petroleum refinery.

VI.A.2.h. "Shoe Seal" means a primary seal employing a metallic band (called a shoe) which is held against the vertical inner-wall of the tank, concentric with the perimeter of the floating roof.

VI.A.2.i. "Vapor Balance System" means a combination of pipes or hoses that create a closed system between the vapor spaces of an unloading tank and a receiving tank such that vapors displaced from the receiving tank are transferred to the tank being unloaded.

VI.A.2.j. "Vapor-Mounted Seal" means a primary seal mounted so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the liquid surface, the floating roof, and the tank wall (thus excluding shoe seals).

VI.A.2.k. "Waxy, Heavy Pour Crude Oil" means a crude oil with a pour point of 10°C (50°F) or higher as determined by the American Society for Testing and Materials Standard D97-66, "Test for Pour Point of Petroleum Oils."

VI.B. Storage of Petroleum Liquid

VI.B.1. Exemptions

VI.B.1.a. Tanks or other containers used to store the following liquids are exempt from the provisions of Subparagraphs VI.B.2., and 3. below:

VI.B.1.a.(i) Diesel Fuels 1-D, 2-D, and 4-D as defined in ASTM D975-78.

VI.B.1.a.(ii) Fuel Oils #1, #2, #3, #4, and #5, as defined in ASTM D396-78.

VI.B.1.a.(iii) Gas Turbine Fuels 1-GT through 4-GT as defined in ASTM D2880-78.

VI.B.1.b. The following underground storage facilities are exempt from Subpart VI.B.2. below:

VI.B.1.b.(i) Underground tanks if the annual sum total of the volume of liquid removed from the tank plus the sum of the volume of liquid added to it does not exceed twice the operational volume of the tank (i.e., a maximum of one turnover per year is allowed).

VI.B.1.b.(ii) Subsurface caverns or porous rock reservoirs.

VI.B.1.b.(iii) Horizontal underground tanks storing JP-4 Jet Fuel.

VI.B.2. Storage of petroleum liquid in tanks greater than 151,412 liters (40,000 gallons)

VI.B.2.a. Storage of petroleum liquid in fixed-roof tanks.

VI.B.2.a.(i) The owner or operator of a fixed-roof tank used for storage of petroleum liquids which have a true vapor pressure greater than 33.6 torr (0.65 psia) at 20°C (or, alternatively, a Reid vapor pressure greater than 1.30 pounds - (67.2 torr) but not greater than 570 torr (11.0 psia) at 20°C, and which are stored in any tank or other container of more than 151,412 liters (40,000 gallons) shall ensure that the tank at all times meets the following conditions:

VI.B.2.a.(i)(A) The tank has been equipped with a pontoon-type, or double-deck type, floating roof or an internal floating cover which rests on the surface of the liquid contents and which is equipped with a closure seal or seals to close the space between the edge of the floating roof (or cover) and tank walls; or

VI.B.2.a.(i)(B) The tank has been equipped with a vapor gathering system capable of collecting the petroleum liquid vapors discharged, together with a vapor recovery or disposal system capable of processing such vapors so as to prevent their emission into the atmosphere.

VI.B.2.a.(i)(C) Control devices shall meet the applicable requirements, including recordkeeping, of Subsections IX.A.3.a,b,c, and e, and IX. A.8.a and b.

VI.B.2.a.(i)(D) The applicable EPA reference methods 1 through 4, and 25, of 40 CFR Part 60 shall be used to determine the efficiency of control devices.

VI.B.2.a.(i)(E) The owner or operator shall maintain records for at least two years of the type, average monthly storage temperature, and true vapor pressure of all petroleum liquids stored in tanks not equipped with an internal floating roof or cover or other control pursuant to Regulation Number 7, Sections VI.B.2.a.(i)(A) or (B) or 7.II.D.

VI.B.2.a.(ii) No owner or operator of a fixed-roof tank equipped with an internal floating roof or cover shall permit the use of such tank unless:

VI.B.2.a.(ii)(A) The tank is maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials; and

VI.B.2.a.(ii)(B) All openings, except stub drains, are equipped with covers, lids, or seals such that:

VI.B.2.a.(ii)(B)(1) The cover, lid, or seal is in the closed position at all times except when in actual use;

VI.B.2.a.(ii)(B)(2) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;

VI.B.2.a.(ii)(B)(3) and Rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

VI.B.2.a.(iii) The operator of a fixed-roof tank equipped with an internal floating roof shall:

VI.B.2.a.(iii)(A) Perform a routine inspection through the tank roof hatches at least once every six months;

VI.B.2.a.(iii)(A)(1) During the routine inspection, the operator shall measure for detectable vapor loss inside the hatch. Detectable vapor loss means a VOC concentration exceeding 10,000 ppm, using a portable hydrocarbon analyzer.

VI.B.2.a.(iii)(B) Perform a complete inspection of the cover and seal whenever the tank is out of service, whenever the routine inspection required in Subclause (A) above reveals detectable vapor loss, and at least once every ten years, and shall notify the Division in writing before such an inspection.

VI.B.2.a.(iii)(C) Ensure during inspections that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials; that the cover is floating uniformly on or above the liquid surface; that there are no visible defects in the surface of the cover or liquid accumulated on the cover; and that the seal is uniformly in place around the circumference of the cover between the cover and the tank wall. If these items are not met, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Division in writing. Such a request must document that alternative storage capacity is unavailable and specify a schedule of actions the owner or operator will take that will assure that the items will be repaired or the vessel will be emptied as soon as possible;

VI.B.2.a.(iii)(D) Maintain records for at least two years of the results of all inspections.

VI.B.2.b. Above ground storage tanks used for the storage of petroleum liquid shall have all external surfaces coated with a material which has a reflectivity for solar radiation of 0.7 or more. Methods A or B of ASTM E424 shall be used to determine reflectivity. Alternatively, any untinted white paint may be used which is specified by the manufacturer for such use.

This provision shall not apply to written symbols or logograms applied to the external surface of the container for purposes of identification provided such symbols do not cover more than 20% of the exposed top and side surface area of the container or more than 18.6 square meters (200 square feet), whichever is less.

VI.B.2.c. Seals on External Floating Roof Tanks

VI.B.2.c.(i) General Provisions

VI.B.2.c.(i)(A) Applicability

This section applies to all petroleum liquid storage vessels equipped with external floating roofs, having capacities greater than 150,000 liters (40,000 gallons) that are located in ozone nonattainment areas.

VI.B.2.c.(i)(B) Exemptions

VI.B.2.c.(i)(B)(1) Total Exemption

The following categories of EFR tanks are exempt from the requirement of Subparagraph VI.B.2.c., except for the applicable recordkeeping requirements of Subparagraph VI.B.2.c (ii)(C).

VI.B.2.c.(i)(B)(1)(a) EFR tanks which store any material whose true vapor pressure as stored never exceeds 67 torr (1.3 psia).

VI.B.2.c.(i)(B)(1)(b) Tanks less than 1,600,000 liters (10,000 barrels) which are used to store crude oil and condensate prior to custody transfer.

VI.B.2.c.(i)(B)(2) Limited Exemptions

The following are exempt from both secondary seal and secondary seal inspection requirements but shall meet the equipment/procedure provisions in Subclause (ii)(A), the semi-annual inspection provisions of Subclause (ii)(B), and the record keeping provisions of Subclause (ii)(C).

VI.B.2.c.(i)(B)(2)(a) Those tanks storing petroleum liquid between 67 and 207 torr (1.3 to 4.0 psia) maximum true vapor pressure (as stored) which are of welded construction and which have one of the following primary seals:

VI.B.2.c.(i)(B)(2)(a)(I) metallic shoe seal

VI.B.2.c.(i)(B)(2)(a)(II) liquid mounted, resilient seal

VI.B.2.c.(i)(B)(2)(a)(III) liquid mounted, liquid filled seal

VI.B.2.c.(i)(B)(2)(b) Any tank storing waxy, heavy-pour crude oil.

VI.B.2.c.(ii) General Requirements

VI.B.2.c.(ii)(A) An operator of an EFR tank storing petroleum liquids with true vapor pressure (as stored) above 67 torr (1.3 psia) shall equip the tank as follows and observe the following procedures:

VI.B.2.c.(ii)(A)(1) Equipment

VI.B.2.c.(ii)(A)(1)(a) Drains: roof drains which are designed to empty directly into the stored product shall be provided with slotted-membrane fabric covers or equivalent covers which cover at least 90 percent of the area of the opening.

VI.B.2.c.(ii)(A)(1)(b) Openings: except for automatic bleeder vents, rim space vents, and leg sleeves, all openings shall be equipped with:

VI.B.2.c.(ii)(A)(1)(b)(I) Projections into the tank which remain below the liquid surface at all times; and

VI.B.2.c.(ii)(A)(1)(b)(II) Covers, seals, or lids.

VI.B.2.c.(ii)(A)(2) Procedures

VI.B.2.c.(ii)(A)(2)(a) Covers, seals and lids shall be kept closed except when the openings are in actual use.

VI.B.2.c.(ii)(A)(2)(b) Automatic bleeder vents shall be kept closed at all times except when the roof is floated off or landed on roof leg supports.

VI.B.2.c.(ii)(A)(2)(c) Rim vents shall be set to open at the manufacturer's recommended setting or, alternatively, only when the roof is being floated off the leg supports.

VI.B.2.c.(ii)(B) Inspections

The operator of an EFR tank subject to this Subparagraph (VI.B.2.c.) shall:

VI.B.2.c.(ii)(B)(1) Perform routine inspections at least once every six months in order to ensure compliance with Part (2) below. The inspections shall include a visual inspection of the secondary seal gap if equipped with a secondary seal.

VI.B.2.c.(ii)(B)(2) Ensure that all seal closure devices meet the following requirements:

VI.B.2.c.(ii)(B)(2)(a) There are no visible holes, tears, or other openings in the seal(s) or seal fabric; and

VI.B.2.c.(ii)(B)(2)(b) The seal(s) are intact and uniformly in place around the circumference of the floating roof and the tank wall.

VI.B.2.c.(ii)(C) Records

VI.B.2.c.(ii)(C)(1) Operators shall:

VI.B.2.c.(ii)(C)(1)(a) Maintain records of the average monthly storage temperature, the Reid vapor pressure of the liquid and the type of liquid stored for all EFR tanks lacking secondary seals and receiving petroleum liquids with a true vapor pressure of 1.0 psi (7.0kPa) or greater; and

VI.B.2.c.(ii)(C)(1)(b) Maintain records of the results of the inspections required herein.

VI.B.2.c.(ii)(C)(2) Copies of all records specified by this Subclause (C) shall be retained by the operator for a minimum of two years after the date on which the record was made.

VI.B.2.c.(iii) Secondary Seal Requirements

VI.B.2.c.(iii)(A) General

No owner or operator of an EFR tank (storing petroleum liquids) not specifically exempted in Subsection VI.B.2.c.(i)(B) above shall store that petroleum liquid unless such vessel is equipped with a continuous secondary seal extending from the rim of the floating roof to the tank wall (i.e., a rim-mounted secondary seal).

VI.B.2.c.(iii)(B) Vapor-Mounted Seals

For EFR tanks required to have a secondary seal and which have a vapor-mounted primary seal:

VI.B.2.c.(iii)(B)(1) An annual inspection shall be made of the total gap area between the secondary seal and the wall of the tank in accordance with the method in (3) below.

VI.B.2.c.(iii)(B)(2) This total gap area shall not exceed 21.2 cm2/meter diameter (1.0 in2/ft. diameter).

VI.B.2.c.(iii)(B)(3) Method to determine gap area:

VI.B.2.c.(iii)(B)(3)(a) Physically measure the length and width of all gaps around the entire circumference of the secondary seal in each place where a 0.32 cm (1/8 in.) uniform diameter probe passes freely (without forcing or binding against the seal) between the seal and the tank wall; and,

VI.B.2.c.(iii)(B)(3)(b) Sum the area of the individual gaps.

VI.B.3. Storage of petroleum liquid in tanks of or less than 151,412 liters (40,000 gallons) capacity

VI.B.3.a. Tanks or containers used to store liquids with true vapor pressure at 20$^{o}$C of less than 78 torr (1.5 psia) or greater than 570 torr (11.0 psia) at 20$^{o}$C are exempt from the provisions of this Paragraph VI.B.3.

VI.B.3.b. The owner or operator of storage tanks at a gasoline dispensing facility (service station) or other facility not addressed in Subsections VI. C.2 OR VI.C.3, which receives and stores petroleum liquid, shall not allow the transfer of petroleum liquid from any delivery vessel into any tank unless the tank is equipped with a submerged fill pipe and the vapors displaced from the storage tank during filling are processed by a vapor control system, if the tank:

VI.B.3.b.(i) Has a rated manufacturer's capacity of 2,082 liters (550 gallons) or more and was installed after November 7, l973, (except for storage tanks below 550 gallon capacity used exclusively for agricultural use; however, these must have a submerged fill pipe), or

VI.B.3.b.(ii) Has a rated manufacturer's capacity of 7,571 liters (2,000 gallons) or more and was installed before November 7, 1973.

VI.B.3.b.(iii) A vapor balance system shall be deemed “approved” if its design and operation are in accordance with the applicable provisions of Appendices A and B.

VI.B.3.c. Tanks equipped with a submerged fill pipe shall meet the specifications of Appendix B.

VI.B.3.d. The vapor control system shall include one or more of the following:

VI.B.3.d.(i) A vapor-tight line from the storage tank to delivery vessel (i.e. an approved control system).

VI.B.3.d.(ii) A refrigerator-condensation system or equivalent designed to recover at least 90 percent by weight of the organic compounds in the displaced vapor.

VI.B.3.e. The owner or operator shall ensure that operating procedures are used so that gasoline cannot be transferred into the tank unless the vapor control system is in use.

VI.B.3.f. The vapor balance system shall meet the specifications of Appendix B.

VI.B.3.g. The vapor balance system and the vapor control system shall meet the requirements of Section XV.

VI.B.3.h. Control devices shall meet the applicable requirements, including recordkeeping, of Subsections IX.A.3.a,b,c, and e, and IX.A.8.a and b.

VI.B.3.i. The applicable EPA reference methods 1 through 4, and 25, of 40 CFR Part 60 shall be used to determine the efficiency of control devices.

VI.C. Transfer of Petroleum Liquid

VI.C.1. Exemptions

Transfer operations involving petroleum liquid with true vapor pressures at 20$^{o}$C of less than 78 torr (1.5 psia) or greater than 570 torr (11.0 psia) shall be exempt from the provisions of this Subsection C.

VI.C.2. Loading Facilities Classified as Terminals

VI.C.2.a. A terminal is defined as a petroleum liquid storage and distribution facility that has an average daily throughput of more than 76,000 liters of gasoline (20,000 gallons), which is loaded directly into transport vehicles. A rolling, 30-day average of throughput shall be used to determine the applicability of this Subsection VI.C.2.

VI.C.2.b. The owner or operator of a terminal subject to this subsection shall equip the terminal with proper loading equipment and shall follow the loading procedures listed below:

VI.C.2.b.(i) Install dry-break loading couplings to prevent petroleum liquid loss during uncoupling from vehicles.

VI.C.2.b.(ii) Install a vapor collection and disposal system which gathers vapor transferred from vehicles being loaded. The system shall include devices to prevent the release of vapor from vapor recovery hoses not in use.

VI.C.2.b.(iii) Use operating procedures to ensure that petroleum liquid cannot be transferred unless the vapor collection equipment is in use.

VI.C.2.b.(iv) Provide for the prevention of overfilling of transport vehicles with loading pump shut-offs, set stop meters, or comparable equipment.

VI.C.2.b.(v) Operate all recovery and disposal equipment at a back pressure less than the pressure relief valve setting of transport vehicles.

VI.C.2.b.(vi) Prevent the release of petroleum liquid on the ground from transport vehicles. Provision shall be made to remove any undelivered petroleum liquid with closed drainage devices.

VI.C.2.b.(vii) Maintain and operate final recovery and disposal equipment or devices in the vapor control system (i.e., control devices) so as to emit no more than 80 milligrams of volatile organic compounds per liter of gasoline being loaded. Such disposal devices shall be approved by the Division.

VI.C.2.b.(viii) Prevent loading of petroleum liquid into transport vehicles which do not have valid leak-tight certification as required in Section VI.D. No truck shall be loaded unless a valid certification sticker is displayed, or a certification letter is carried in the truck.

VI.C.2.b.(ix) Follow all control procedures to prevent leaks as specified in Section XV.

VI.C.2.c. Control devices shall meet the applicable requirements, including recordkeeping of Subsections IX.A.3.a,b,c, and e, and IX.A.8.a and b.

VI.C.2.d. The applicable methods of 40 CFR 60. 503, or EPA reference methods 1 through 4, 25A, and 25B of 40 CFR Part 60 shall be used to determine the efficiency of control devices.

VI.C.2.e. The method set forth in Appendix A of EPA-450/2-77-026, “Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals” shall be used to test emission points other than control devices.

VI.C.3. Loading Facilities Classified as Bulk Plants

VI.C.3.a. A bulk plant is defined as a petroleum liquid storage and distribution facility that has an average daily throughput of 76,000 liters of gasoline (20,000 gallons) or less, which is loaded directly into transport trucks. (As used herein, "bulk plant" does not include service stations nor separate operations within petroleum liquid distribution facilities which pump only into fuel tanks fueling motor vehicles. Both such operations are regulated by Paragraph VI.B.3. of this Regulation). A rolling 30-day average of throughput shall be used to determine the applicability of this regulation.

VI.C.3.b. The owner or operator of a bulk storage plant subject to this subsection shall install an approved vapor balance system to return vapors to the incoming transport trucks during the filling of tanks controlled under Paragraph VI.B.3. (A vapor balance system shall be deemed "approved" if its design and operation is in accord with the provisions of Appendix C of this Regulation.)

VI.C.3.c. The owner or operator of a bulk plant which serves storage tanks which are required to collect and recover vapor as prescribed in Paragraph VI.B.3. shall:

VI.C.3.c.(i) Install and operate vapor collection and return equipment on any transport vehicles used to deliver to controlled tanks, and

VI.C.3.c.(ii) Install and operate vapor collection and return equipment at loading facilities to collect vapors during loading of tank compartments of outbound transport trucks and return these vapors to the bulk plant storage tanks, using an approved vapor balance system.

VI.C.3.c.(iii) Assure that transport trucks and loading facilities conform to the applicable provisions of C.2. and C.4. of this Section VI.

VI.C.3.d. The owner or operator of a bulk plant which serves only storage tanks exempted from the provisions of Subparagraph VI.B.3.b. by reason of their small size or location in an attainment area shall load outbound transport trucks using equipment that provides for top loading of the petroleum liquid into the vehicle tank compartments through an extended fill tube which reaches within 15.24 cm (6 in.) of the bottom of the tank compartment.

VI.C.3.e. The owner or operator of a bulk plant subject to this subsection shall ensure that petroleum liquid cannot be transferred unless the vapor collection equipment is in use.

VI.C.3.f. The owner or operator of a bulk plant subject to this subsection shall follow all procedures to prevent leaks as specified in Section XV.

VI.C.4. Transport Vehicles

VI.C.4.a. Rail cars shall be loaded only at facilities which allow for the following:

VI.C.4.a.(i) A submerged fill pipe which reaches within 15.24 cm (6 in.) of the bottom of the tank.

VI.C.4.a.(ii) Vapor collection and/or disposal equipment designated and operated to recover vapors displaced during the loading of the rail car.

VI.C.4.a.(iii) A vapor-tight seal around the tank car hatch and the loading equipment.

VI.C.4.b. The owner or operator of petroleum transport trucks which serve locations required to be equipped with vapor recovery equipment shall load only at facilities capable of disposing of collected vapors. The owner or operator shall assure that such vehicles possess the proper equipment and that work practices are followed so that:

VI.C.4.b.(i) Dry-break loading and unloading nozzles are used and are compatible with those required at loading facilities.

VI.C.4.b.(ii) Vapor recovery hoses are connected at all times during unloading or loading of petroleum distillate.

VI.C.4.b.(iii) Transport trailers and vehicle tanks are operated and maintained to prevent detectable hydrocarbon vapor loss during loading, transport and delivery.

VI.C.4.b.(iv) Compartment dome lids are closed and locked during transfers of petroleum liquid. Such lids may be opened for the purpose of certifying the accuracy of a delivery only prior to and after such delivery.

VI.C.4.b.(v) Hoses, couplings, and valves are maintained to prevent dripping, leaking, or other liquid or vapor loss during loading or unloading.

VI.D. Control of Volatile Organic Compound Leaks from Gasoline Transport Trucks

VI.D.1. General Provisions

VI.D.1.a. Applicability

This subsection is applicable to all gasoline transport trucks equipped for gasoline vapor collection which receive or dispense gasoline at terminals, bulk plants, or gasoline dispensing facilities located in the nonattainment areas.

VI.D.1.b. Definitions

For the purpose of this subsection, the following definitions apply:

VI.D.1.b.(i) “Gasoline Transport Truck” means a tank truck or tank trailer equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities (e.g., service stations), bulk gasoline plants, or gasoline terminals.

VI.D.1.b.(ii) “Vapor Collection System” means a vapor transport system which uses direct displacement by the gasoline being transferred to force vapors from the vessel being loaded into a vessel being unloaded or into a vapor control system or vapor holding tank.

VI.D.1.b.(iii) “Vapor Control System” means a system that is designed to control the release of volatile organic compounds displaced from a vessel during transfer of gasoline.

VI.D.2. Provisions for Specific Processes

VI.D.2.a. No terminal operator, when monitoring the gasoline loading operation and no owner or operator of a gasoline transport truck shall allow a gasoline transport truck subject to this Subsection VI.D. to be filled with a VOC with Reid Vapor Pressure of 4.0 or greater unless the gasoline tank truck:

VI.D.2.a.(i) Is tested annually according to the test procedure referenced in Appendix E. Testing shall be completed prior to the onset of the summer ozone season (test October through April). In addition, the visual inspection detailed in Appendix E, Part B, shall be performed at least once every six months. Trucks which have not been previously certified (new gasoline transport trucks) may be tested May through September as set forth in VI.D.4.d.(iv).

VI.D.2.a.(ii) Sustains a combined absolute pressure change of no more than 5.6 torr (3 inches of H2O) in five-minute test periods when pressurized to a gauge pressure of 33.6 torr (18 inches of H2O), then evacuated to a gauge pressure of minus 11.2 torr (minus 6 inches of H2O), during the testing required in Subparagraph a.(i), above (i.e., the sum of the absolute pressure change determined by the pressure test plus the absolute pressure change determined by the vacuum test shall not exceed 3 inches of water); and

VI.D.2.a.(ii)(A) Sustains a leak rate of no more than 5.6 torr (3 inches H2O) in five minutes when the internal vapor valves are tested according to procedures in Part E., Appendix E.

VI.D.2.a.(ii)(b) Passes a retest within twenty (20) days if it does not meet the criteria of a.(ii) and (iii) above.

VI.D.2.a.(ii)(C) At all times carries an unexpired certification sticker (pursuant to Subparagraphs D.4.c. and d.).

VI.D.2.b. Monitoring

VI.D.2.b.(i) The Division may, at any time, monitor a gasoline tank truck vapor collection system, or vapor control system, by the method referenced in Subparagraph D.3.c to confirm continued compliance with Subparagraph 2.a. above.

VI.D.2.b.(ii) Within fifteen (15) days after an exceedance is detected a tank shall pass:

VI.D.2.b.(ii)(A) A pressure/vacuum test per Appendix E; or

VI.D.2.b.(ii)(B) A test with combustible gas detector using procedures referenced in Subparagraph 3.c such that no leak over 60% of the propane lower explosive limit (LEL) exists.

VI.D.3. Testing and Monitoring

VI.D.3.a. The owner or operator of a gasoline transport truck shall at their own expense, demonstrate compliance with Paragraph 2, by methods of Appendix E. All tests shall be made by, or under the direction of, a person qualified by training and/or experience in the field of air pollution testing or gasoline transport truck maintenance.

VI.D.3.b. The owner or operator of a gasoline transport truck subject to this regulation must notify the Division of the date and location of a certification test at least forty-eight (48) hours before an anticipated test date, except that for the first truck tested by a given transport company and for the first test by a given testing facility, five (5) days notice must be given the Division: or alternatively, a designated individual within the Division may orally waive the above notice requirements and allow a shorter notice period before the test.

VI.D.3.c. Monitoring to confirm the continuing existence of leak tight conditions shall be consistent with the procedures described in Appendix B. of "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems," EPA-450/2-78-051.

VI.D.4. Recordkeeping and Reporting

VI.D.4.a. The owner or operator of a gasoline transport truck subject to this Subsection D. shall maintain records of all certification testing and repairs. The records shall identify the gasoline transport truck, the date of the test or repairs and, if applicable, the type of repair and the date of retest. The written record shall include entries of any pre-test repairs, adjustments, or modifications. These shall also include the part name, number, and vendor name of any part removed and of any part installed. The records shall be maintained in legible, readily available form for at least two (2) years after the date the testing or repair was completed and shall be made available to the Division for inspection upon request.

VI.D.4.b. The records of certification tests required by Subparagraph 2.a. of this Subsection D. shall, as a minimum, contain all of the following entries:

VI.D.4.b.(i) The gasoline transport truck/tank identification number;

VI.D.4.b.(ii) The following data for each test trial:

VI.D.4.b.(ii)(A) The initial test pressure and the time of the reading.

VI.D.4.b.(ii)(B) The final test pressure and the time of the reading.

VI.D.4.b.(ii)(C) The initial test vacuum and the time of the reading.

VI.D.4.b.(ii)(D) The final test vacuum and the time of the reading.

VI.D.4.b.(ii)(E) For the vapor valve test, the initial test-pressure and time of reading; and

VI.D.4.b.(ii)(F) The final test-pressure and the time of the reading.

VI.D.4.b.(iii) The size of each of the compartments within the tank and whether such compartment was manifolded or was tested separately during pressure and vacuum tests.

VI.D.4.b.(iv) At the top of each report page shall be the company name and the date and location of the test results recorded on that page; and

VI.D.4.b.(v) Name and title of the person conducting the test.

VI.D.4.c. The owner or operator of a gasoline transport truck subject to this regulation must annually certify to the Division that the gasoline transport truck has been tested by an applicable method referenced in Paragraph 3. The application for certification shall include:

VI.D.4.c.(i) The name and address of the company and the name and telephone number of responsible company representative over whose signature the certification is submitted; and,

VI.D.4.c.(ii) A copy of the information recorded to comply with Subparagraph 4.b. above.

VI.D.4.d. Certification

VI.D.4.d.(i) Except as stated in Paragraphs (ii), (iii), and (iv) below, upon receipt of an application for certification that meets the above requirements, the Division shall issue a sticker and a letter of certification to be valid for 380 days after the most recent, successfully completed pressure/vacuum test, except that the expiration date shall not fall within the months of May through September. The certification shall be valid for less than 380 days if necessary to remain within the allowable test period of October through April.

VI.D.4.d.(ii) Owners or operators of gasoline transport trucks with certificates that expire May 1, 1990 (1991) through July 31, 1990 (1991) shall renew their certificates in March or April, 1990 (1991).

VI.D.4.d.(iii) Owners or operators of gasoline transport trucks with certificates that expire August 1, 1990 (1991) through September 30, 1990 (1991) shall renew their certificates in October or November 1990 (1991). Certificates which expire August 1, 1990 (1991) through September 30, 1990 (1991) shall be valid until November 30, 1990 (1991).

VI.D.4.d.(iv) Owners or operators of previously uncertified trucks (new gasoline transport trucks) subject to this subsection may obtain initial certification May 1 through September 30, if necessary. Certification for such trucks certified May 1 through July 31 shall be valid for 270 days. Certification for such trucks certified August 1 through September 30 shall be valid for 430 days. All expiration dates for such certificates shall fall within the allowable testing period of October through April.

VI.D.4.d.(v) This certification shall be revoked if monitoring detects an exceedance which is not corrected within fifteen (15) days of initial detection, or if the exceedence is judged so severe as to warrant immediate revocation (i.e., no seal is maintained during transfer).

VI.D.4.e. The certification letter shall be kept with the tank or at the transport company office at all times and shall be shown to Division personnel upon their request. Copies of all records and reports required by the provisions of this Subsection D. shall be made available to the Division upon oral or written request. The tank shall at all times prominently display a valid sticker when containing gasoline in the ozone nonattainment area.

## VII. Crude Oil

VII.A. General Exemptions

VII.A.1. Storage tanks of 151,412 liters (40,000 gallons) or less used to store crude oil is exempt from the provisions of this section.

VII.A.2. Storage tanks with capacities of less than 1,590 cubic meters (10,000 barrels) used to store crude oil and condensate prior to lease custody transfer are exempt from the provisions of this Regulation Number 7 other than Sections XII and XVII.

VII.B. Equipment

Pumps and compressors handling crude oil shall be subject to the provisions of Subsection VI.A.

VII.C. Storage

Except as provided in VII.A.2., crude oil stored in tanks greater than 151,412 liters (40,000 gallons) shall be subject to the provisions of Subparagraph B.1.b. and Paragraph B.2. of Section VI.

## VIII. Petroleum Processing and Refining

VIII.A. Wastewater (Oil/Water) Separators

VIII.A.1. Definitions

VIII.A.1.a. “Forebays” mean the primary sections of a wastewater separator.

VIII.A.1.b. “Wastewater (oil/water) separator” means any device or piece of equipment which utilizes the difference in density between oil and water to remove oil and associated chemicals from water, or any device, such as a flocculation tank, clarifier, etc., which removes petroleum derived compounds from wastewater.

VIII.A.2. The owner or operator of any wastewater (oil/water) separators at a petroleum refinery shall:

VIII.A.2.a. Equip the forebays and separator sections of the wastewater separators with one or more of the following emission control devices, ensuring that such device is properly installed, in good working order and properly maintained:

VIII.A.2.a.(i) a solid cover with all openings sealed and the liquid contents totally enclosed.

VIII.A.2.a.(ii) a pontoon-type or double-deck type floating roof, or internal floating cover. The floating roof or cover must rest on the surface of the liquid contents and be equipped with a closure seal or seals to close the space between the edge of the floating roof (or cover) and the wall(s) of the compartment.

VIII.A.2.a.(iii) a vapor recovery system consisting of a vapor gathering device capable of collecting the volatile organic compound vapors discharged and a vapor disposal device capable of processing such volatile organic vapors so as to prevent their emission into the atmosphere.

VIII.A.2.a.(iii)(A) Control devices shall meet the applicable requirements, including recordkeeping, of Subsections IX.A.3.a,b,c, and e, and IX.A.8.a and b.

VIII.A.2.a.(iii)(B) The applicable EPA reference methods 1 through 4, and 25, of 40 CFR Part 60 shall be used to determine the efficiency of control devices.

VIII.A.2.b. Equip all openings in covers, separators, and forebays with lids or seals such that the lids or seals are in the closed position at all times except when in actual use. Access for gauging and sampling shall be minimized.

VIII.B. Emissions from Petroleum Refineries

VIII.B.1. Definitions

VIII.B.1.a. “Firebox” means the chamber or compartment of a boiler or furnace in which materials are burned but does not mean the combustion chamber of an incinerator.

VIII.B.1.b. “Turnaround” means the procedure of shutting a refinery unit down after a run to do necessary maintenance and repair work and then putting the unit back on stream.

VIII.B.2. Process unit turnarounds

The owner or operator of a petroleum refinery shall develop and submit to the Division for approval a detailed procedure for minimization of volatile organic compound emissions during process unit turnaround. As a minimum, the procedure shall provide for:

VIII.B.2.a. Depressurization venting of the process unit or vessel to a vapor recovery system, or to a flare or firebox which assures at least 90% combustion efficiency;

VIII.B.2.b. No emission of volatile organic compounds from a process unit or vessel until its internal pressure is 17.2 psia or less; and

VIII.B.2.c. Recordkeeping of the following items. Records shall be kept for at least two years and shall be made available to the Division for review upon request.

VIII.B.2.c.(i) Every date that each process unit is shut down,

VIII.B.2.c.(ii) The approximate vessel volatile organic compound concentration when the volatile organic compounds were first discharged to the atmosphere, and

VIII.B.2.c.(iii) The approximate total quantity of volatile organic compounds emitted to the atmosphere.

VIII.B.3. Venting of blowdown systems and safety pressure relief valves

All blowdown systems, process equipment vents, and pressure relief valves shall be vented to a vapor recovery system, or to a flare or firebox which assures at least 90% combustion efficiency.

VIII.B.4. Vacuum-Producing Systems

VIII.B.4.a. The owner or operator of any vacuum-producing system at a petroleum refinery shall not permit the emission of any noncondensible volatile organic compounds from the condensers, hot wells or accumulators of the system. This emission limit shall be achieved by:

VIII.B.4.a.(i) Venting the noncondensible vapors to a flare or other combustion device, or,

VIII.B.4.a.(ii) Compressing the vapors and adding them to the refinery fuel gas.

VIII.B.5. All sampling, testing, and measuring ports, hatches, and access openings shall be kept in a closed sealed position except during actual sampling or access.

VIII.B.6. Control devices shall meet the applicable requirements, including recordkeeping, of Subsections IX.A.3.a, b, c, and e, and IX.A.8.a and b.

VIII.B.7. The applicable EPA reference methods 1 through 4, and 25, of 40 CFR Part 60, shall be used to determine the efficiency of control devices.

VIII.C. Petroleum Refinery Equipment Leaks

VIII.C.1. Definitions

For the purpose of this subsection, the following definitions apply:

VIII.C.1.a. “Accessible Component” means a component which can be reached, if necessary, by safe and proper use of portable ladders such as are acceptable to OSHA, as well as by built-in ladders and walkways. “Accessible” also includes components which can be reached by the safe use of an extension on the monitoring probe.

VIII.C.1.b. “Component” means any piece of equipment, which has the potential to leak volatile organic compounds when tested in the manner described in Paragraph 3. These sources include, but are not limited to, pumping seals, compressor seals, seal oil degassing vents, pipeline valves, flanges and other connections, pressure relief devices, process drains, and open ended pipes. Excluded from these sources are valves which are not externally regulated.

VIII.C.1.c. "Gaseous Service" means equipment which processes, transfers or contains a volatile organic compound or mixture of volatile organic compounds in the gaseous phase.

VIII.C.1.d. "In Heavy VOC Liquid Service" means that the piece of equipment is not in gaseous service or in light VOC liquid service.

VIII.C.1.e. "In Light Liquid VOC Service" Equipment is in light liquid service if the following conditions apply:

VIII.C.1.e.(i) the true vapor pressure of one or more of the components is greater than 0.3 kPa at 20°C. True vapor pressures may be obtained from standard reference texts or may be determined by ASTM D-2879.

VIII.C.1.e.(ii) the total concentration of the pure components have a true vapor pressure greater than 0.3 kPa at 20°C, is equal to or greater than 20 percent by weight; and

VIII.C.1.e.(iii) the fluid is a liquid at operating conditions.

VIII.C.1.f. "Refinery Unit" means a set of components which are a part of a basic process operation, such as, distillation, hydrotreating, cracking, or reforming of hydrocarbons.

VIII.C.1.g. "Water Draw" means a routinely used valve or system employing a valve which allows non-VOC material (usually water) to be separated from VOC.

VIII.C.2. Provisions for Specific Processes

VIII.C.2.a. The owner or operator of a petroleum refinery complex subject to this regulation shall:

VIII.C.2.a.(i) Develop a monitoring program consistent with the provisions in Paragraph 3.

VIII.C.2.a.(ii) Conduct a monitoring program consistent with the provisions in Subparagraph 4.a.

VIII.C.2.a.(iii) Record all leaking components which have a voc concentration exceeding 10,000 ppm when tested according to Paragraph 3., and place an identifying tag on each component consistent with the provisions in clause 4.a (iii).

VIII.C.2.a.(iv) Repair and retest leaking components, as defined in clause (iii) above, as soon as possible, but no later than fifteen (15) days after the leak is found, excepting those specified in (v) and (vi) below.

VIII.C.2.a.(v) Identify all leaking components (as defined in clause (iii) above), which cannot be repaired until the unit is shut down for turnaround, and repair and retest as in clause (iv) when the unit is back on stream.

VIII.C.2.a.(vi) When a component leak cannot be fixed within fifteen (15) working days solely because parts are not available, the following shall be noted in an "awaiting parts log:"

VIII.C.2.a.(vi)(A)component identification and tag number

VIII.C.2.a.(vi)(B)date part was ordered

VIII.C.2.a.(vi)(C) date part was received

VIII.C.2.a.(vi)(D) date repair was made

VIII.C.2.b. Except for safety pressure relief valves, no owner or operator of a petroleum refinery shall install or operate a valve at the end of a pipe or line containing volatile organic compounds unless the pipe or line is sealed with a second valve, a blind flange, a plug, or a cap. The sealing device may be removed only when a sample is being taken or when the valve is otherwise in use.

VIII.C.2.c. The Division, at its discretion, may require early unit turnaround based on the number and severity of tagged leaks awaiting turnaround provided:

VIII.C.2.c.(i) The requirement does not exceed reasonable available control technology due to cost per ton of emissions reduction achieved by the early turnaround or other reasonable analysis.

VIII.C.2.c.(ii) The Division provides the owner or operator of a petroleum refinery with written notification at least 180 days before requiring an early turnaround. The owner or operator will have 30 days from the date of the Division's notification to contest the requirement by submitting a demonstration that the requirement is beyond reasonable available control technology. If no demonstration is made, it will be assumed the requirement is reasonable. If a demonstration is submitted by the owner or operator, the Division will either approve the demonstration or disapprove the demonstration with a justification regarding the disapproval within 30 days of the date the demonstration is submitted to the Division.

VIII.C.2.c.(iii) The requirement is not contested by the owner or operator. Should the requirement be contested, the requirement for early unit turnaround will be delayed until 180 days after the demonstration discussed in item (ii) above is disapproved by the Division.

VIII.C.2.d. Piping valves and pressure relief valves in gaseous VOC service shall be marked in some manner that will be readily obvious to both refinery personnel performing monitoring and the Division, to identify them as components which are monitored quarterly.

VIII.C.3. Testing and Monitoring Procedures

Testing and calibration procedures to determine compliance with this regulation shall be consistent with EPA reference method 21 of 40 CFR Part 60. The reference compound may be methane or hexane. A leak is defined as a reading of 10,000 ppmv of the reference compound.

VIII.C.4. Monitoring, Recordkeeping, Reporting

VIII.C.4.a. Monitoring

VIII.C.4.a.(i) The owner or operator of a petroleum refinery subject to this regulation shall conduct a monitoring program consistent with the following provisions:

VIII.C.4.a.(i)(A) Monitor yearly by the method referenced in Paragraph 3., above, all:

VIII.C.4.a.(i)(A)(1) Pump seals; and

VIII.C.4.a.(i)(A)(2) Piping valves in light liquid VOC service; and

VIII.C.4.a.(i)(A)(3) Process drains; and

VIII.C.4.a.(i)(A)(4) Heat-exchanger body flanges; and

VIII.C.4.a.(i)(A)(5) Other accessible flanges in VOC service.

VIII.C.4.a.(i)(A)(6) Components in heavy liquid VOC service are exempt from requirements of this Subclause (A).

VIII.C.4.a.(i)(B) Monitor quarterly by the method referenced in Paragraph 3., above, all:

VIII.C.4.a.(i)(B)(1) Compressor seals; and

VIII.C.4.a.(i)(B)(2) Piping valves in gaseous service; and

VIII.C.4.a.(i)(B)(3) Pressure relief valves in gaseous service.

VIII.C.4.a.(i)(C) Monitor at least weekly by visual methods all pump seals.

VIII.C.4.a.(i)(D) Monitor within 24 hours with a VOC detector and make record of any component from which VOC liquids are observed leaking.

VIII.C.4.a.(i)(E) Components in heavy liquid VOC service shall be monitored by the method referenced in Paragraph 3. above within five days if evidence of a potential leak is found by visual, audible, olfactory, or any other detectable method.

VIII.C.4.a.(ii) Inaccessible valves and flanges shall be monitored annually or, as a minimum, at unit shutdown using the procedures of VIII.C.2.a (v). Pressure relief devices which are connected to an operating flare header or vapor recovery device, storage tank valves, and valves that are not externally regulated are exempt from the monitoring requirements in Paragraph (i) of this section.

VIII.C.4.a.(iii) The owner or operator of a petroleum refinery, upon the detection of a leaking component as defined in clause 2.a (iii), shall affix a weatherproof and readily visible tag, bearing an identification number and the date the leak is located, to the leaking component. This tag shall remain in place until the leaking component is repaired. In addition, the owner or operator shall log the leak (including those leaks immediately repaired), per the requirements of Regulation Number 7,Section VIII.C.4.b.(i)-(iii).

VIII.C.4.b. Recordkeeping

VIII.C.4.b.(i) The owner or operator of a petroleum refinery shall maintain a leaking components monitoring log which shall contain at a minimum, the following data:

VIII.C.4.b.(i)(A) The name of the process unit where the component is located.

VIII.C.4.b.(i)(B) The type of component (e.g., valve, seal).

VIII.C.4.b.(i)(C) The tag number of the component.

VIII.C.4.b.(i)(D) The date on which a leaking component is discovered.

VIII.C.4.b.(i)(E) The date on which a leaking component is repaired.

VIII.C.4.b.(i)(F) The date and instrument reading found during the recheck procedure subsequent to repairing a leaking component.

VIII.C.4.b.(i)(G) A record of the calibration of the monitoring instrument.

VIII.C.4.b.(i)(H) Those leaks that cannot be repaired until turnaround.

VIII.C.4.b.(i)(I) The total number of components checked and the total number of components found leaking.

VIII.C.4.b.(i)(J) The total number of components subject to Section VIII.C.2.a (v) which upon retest were still leaking as defined in Paragraph 3 above.

VIII.C.4.b.(ii) Copies of the monitoring log shall be retained by the owner or operator for a minimum of two (2) years after the date on which the record was made or report prepared.

VIII.C.4.b.(iii) Copies of the monitoring log shall be made available to the Division upon oral or written request.

VIII.C.4.c. Reporting

The owner or operator of a petroleum refinery, upon the completion of each yearly and/or quarterly monitoring procedure, shall:

VIII.C.4.c.(i) Submit a report to the Division by the 15th day of February, May, August, and November that lists all leaking components that were located during the previous three (3) calendar months (quarter), but not repaired within fifteen (15) working days, all leaking components awaiting unit turnaround, the total number of components inspected, and the total number of components found leaking.

VIII.C.4.c.(ii) Submit a signed statement with the report attesting to the fact that, with the exception to those leaking components listed in clause 4.b.(i)(H), all monitoring and repairs were performed as stipulated in the monitoring program.

## IX. Surface Coating Operations

IX.A. General Provisions

IX.A.1. Definitions

IX.A.1.a. "Coating" means a protective, functional or decorative film applied in a thin layer to a surface. This term often applies to paints such as lacquers or enamels, but is also used to refer to films applied to paper, plastics, or foils.

IX.A.1.b. "Coating Applicator" means an apparatus used to apply a surface coating.

IX.A.1.c. "Coating Line" means an operation which includes both (1) a coating applicator and (2) device(s) and/or area(s) to accomplish one or more of the following processes: flash-off, drying, curing, heat-setting and/or polymerization.

IX.A.1.d. "Coating Solids" means that portion of a surface coating, which remains after volatile components have escaped.

IX.A.1.e. "Final Repair Application" means that application of surface coating specifically intended to repair damage and imperfections in existing surface coats.

IX.A.1.f. "Finished Coating Solids" means those coating-solids that remain on a coated substance after completion of all production processes.

IX.A.1.g. "Flash-off Area" means the space between the application area and the oven.

IX.A.1.h. "Prime Coat" (also termed "primer") means the first film of coating applied in a multiple-coat operation.

IX.A.1.i. "Single Coat" means a single film of coating applied directly to the metal substrate, omitting the primer application.

IX.A.1.j. "Surface Coating" means a liquid, liquefiable, or mastic composition which is converted to a solid (or semi-solid) protective, decorative, or adherent film or deposit after application as a thin layer or by impregnation.

In a machine which has both coating and printing units, all units shall be considered as performing a printing operation. Such a machine is subject to the standards governing graphic arts, and thus is not covered by coating standards.

IX.A.1.k. "Surface Coating Oven" means a chamber within which heat is used to bake, cure, polymerize, and/or dry a surface coating.

IX.A.1.l. "Topcoat" means the final film of coating applied in a multiple-coat operation.

IX.A.2. Abbreviations

IX.A.2.a. Kg/lc shall be the abbreviation for: kilograms of solvent VOC per liter of coating (minus water and "exempt" solvents, as defined in Section II.B.).

IX.A.2.b. Lb/gc shall be the abbreviation for: (avoirdupois) pounds of solvent VOC per gallon of coating (minus water and "exempt" solvents, as defined in Section II.B.).

IX.A.3. Test Methods and Procedures

IX.A.3.a. The owner or operator of any VOC source required to comply with this section shall, at their own expense, demonstrate compliance using EPA reference method 24 of 40 CFR Part 60 for surface coatings, and reference method 25 and reference methods I through 4 for add-on controls.

IX.A.3.b. The test protocol should be in accordance with the requirements of the Air Pollution Control Division Compliance Test Manual and shall be submitted to the Division for review and approval at least thirty (30) days prior to testing. No test shall be conducted without prior approval from the Division.

IX.A.3.c. The Division may use independent tests to verify test data submitted by the source operator or owner. The test methods shall be those listed in Subclause A above and the Division test results shall take precedence.

IX.A.3.d. The Division may accept, instead of the testing required in this subsection, a certification by the manufacturer of the composition of the coatings if supported by actual batch formulation records. The owner or operator of the VOC source required to comply with this section shall obtain certification from the coating manufacturer(s) that the test method(s) used for determination of VOC content meet the requirements specified in Subsection IX.A.3.a. The owner or operator shall have this certification readily available to Division personnel, in order to allow the results to be used in the daily compliance calculations specified in Subsection IX.A.10.

IX.A.3.e. The performance of add-on control device equipment shall be established with the required test methods of IX.A.3.a at equipment startup, and after major modification to the control equipment. Baseline operating parameters shall be established during the satisfactory (i.e. in-compliance) operation of the control equipment, including operation during all anticipated ranges of process throughput. During subsequent process operation, the owner or operator shall maintain the operating conditions of the add-on controls as close to these baseline conditions as possible. If serious operational problems with an add-on control system are evidenced from the daily monitoring required by Subsection IX.A.8.b. (such problems may be indicated by changes from baseline conditions), repeat performance tests may be required by the Division, as necessary.

IX.A.4. Sampling

To determine compliance with applicable surface coating standards, samples shall be taken from the coating as freshly delivered to the reservoir of the coating applicator.

IX.A.5. Alternative compliance methods for processes and operations

For each process specified in Sections IX.B through IX.N, the emission limits designated for that process shall be achieved by:

IX.A.5.a. Use of coatings with proportions of VOC less than or equal to the maximums specified by the applicable subsection of this regulation; or

IX.A.5.b. Use of the specified equipment and procedures prescribed by the applicable subsection of this regulation; or

IX.A.5.c. Use of an alternative means of control which satisfies the requirements of 5.e and f below and Section II.D; or

IX.A.5.d. Use of crossline averaging. The emission trading requirements of Regulation 3.V. shall be met. In addition, the following requirements apply:

IX.A.5.d.(i) The actual reduction shall be equivalent to the actual reduction that would be achieved on a line-by-line basis.

IX.A.5.d.(ii) Credit shall not be received for downtime, however, credit is allowed for enforceable production limits.

IX.A.5.d.(iii) Crossline averaging shall be used only across lines in the same control technique guidance group.

IX.A.5.d.(iv) The emission trading policy shall be met on a daily weighted average.

IX.A.5.d.(v) Sources subject to best available control technology (BACT) and lowest achievable emission rate (LAER) requirements shall not use cross line averaging.

IX.A.5.d.(vi) VOC emissions shall be expressed as lbs/gallons solids to determine reduction over baseline (lb VOC/lb solids for graphic arts).

IX.A.5.d.(vii) Organisol and plastisol coatings shall not be used to bubble emissions from vinyl surface or automobile topcoating operations.

IX.A.5.d.(viii) Before crossline averaging may be used, the control methodology shall be approved as a revision to the State Implementation Plan.

IX.A.5.e. The design, operation and efficiency of any capture system used in conjunction with any emission control system shall be certified in writing by the source owner or operator and approved by the Division. Unless the capture system meets the requirements for a total enclosure as specified in the New Source Performance Standard for the Magnetic Tape Manufacturing Industry, 53FR38892, October 3, 1988, or unless Division approved material balance techniques are used to adequately determine overall VOC capture and destruction/recovery efficiency, the efficiency of the capture system shall be determined by test methods approved as a revision to the State Implementation Plan. Testing for capture efficiency shall be performed on a case-by-case basis as required by the Division. The requirements of Subsections IX.A.3.e and IX.A.8.b. shall apply to the capture and control device system. When capture and control device efficiency must be independently determined, the overall VOC emission reduction rate equals the (percent capture efficiency X percent control device efficiency )/100.

IX.A.5.f. Sources which use add-on controls, crossline averaging, or an approved alternative control strategy instead of low solvent technology to meet the applicable emission limit shall meet the equivalent VOC emission limit, on the basis of solids applied (lb VOC/gal solids applied, or lb VOC/lb solids applied, for graphic arts sources). Appendix F sets forth the procedure for converting emission limits and lists equivalent limits for various coating operations.

IX.A.5.g. Owners or operators of sources which use a carbon adsorption system shall provide for the proper disposal or reuse of all VOC recovered.

IX.A.6. Exemptions

IX.A.6.a. The requirements of this Section IX do not apply to sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance, provided;

IX.A.6.a.(i) the operation of the source is not an integral part of the production process; and

IX.A.6.a.(ii) the emissions from the source do not exceed 363 kilograms (800 lbs.) in any calendar month; and

IX.A.6.a.(iii) the exemption is approved in writing by the Division.

IX.A.6.b. The requirements of Sections IX.C, D,E,F,G,H,I,L and M are not applicable to sources whose actual emissions, including fugitive emissions, before add-on controls, are less than 6.8 kilograms (15 lbs.) per day and less than 1.4 kilograms (3 lbs.) per hour. Emissions from all sources within the same control technique guidance group shall be totaled to determine actual emissions.

IX.A.7. Fugitive emission control

IX.A.7.a. Control techniques and work practices shall be implemented at all times to reduce VOC emissions from fugitive sources. Control techniques and work practices include, but are not limited to:

IX.A.7.a.(i) tight-fitting covers for open tanks;

IX.A.7.a.(ii) covered containers for solvent wiping cloths;

IX.A.7.a.(iii) proper disposal of dirty cleanup solvent.

IX.A.7.b. Emissions of organic material released during clean-up operations, disposal, and other fugitive emissions shall be included when determining total emissions, unless the source owner or operator documents that the VOCs are collected and disposed of in a manner that prevents evaporation to the atmosphere.

IX.A.8. Recordkeeping, Reporting, and Monitoring

IX.A.8.a. If add-on control equipment is used, continuous monitors of the following parameters shall be installed, calibrated, and operated at all times that the associated control equipment is operating:

IX.A.8.a.(i) exhaust gas temperature of all incinerators;

IX.A.8.a.(ii) temperature rise across a catalytic incineration bed;

IX.A.8.a.(iii) breakthrough of VOC on a carbon adsorption unit;

IX.A.8.a.(iv) any other monitoring and/or recording device, maintenance and/or control-media-replacement schedule(s) specified on a case-by-case basis by the Division.

IX.A.8.b. If add-on control equipment is used, in addition to the requirements of Subsection IX.A.8.a, the following information and any other necessary information, as determined applicable for each source by the Division, shall be monitored and recorded daily in order to assure continuous compliance. The substitution of continuous recordings for daily recording may be allowed by the Division.

IX.A.8.b.(i) For the capture system: fan power use, duct flow, duct pressure.

IX.A.8.b.(ii) For carbon adsorbers: bed temperature, bed vacuum pressure, pressure at the vacuum pump, accumulated time of operation, concentration of VOC in the outlet gas, solvent recovery.

IX.A.8.b.(iii) For refrigeration systems: compressor discharge and suction pressures, condenser fluid temperature, solvent recovery.

IX.A.8.b.(iv) For incinerator systems: exhaust gas temperature, temperature rise across a catalytic incinerator bed, flame temperature, accumulated time of incinerator.

IX.A.8.c. Recordkeeping procedures shall follow the guidance in “Recordkeeping Guidance Document for Surface Coating Operations and the Graphic Arts Industry,” July 1989, EPA 340/1-88-003.

IX.A.9. Required and Prohibited Acts

IX.A.9.a. No owner or operator of a source of VOCs subject to this section shall operate, cause, allow or permit the operation of the source, unless:

IX.A.9.a.(1) For each category of surface coating as specified in Sections IX.B. through IX.M, the owner or operator of a surface coating line or facility subject to that section does not cause, allow or permit the discharge into the atmosphere of any VOCs in excess of the specified emission limit, calculated as delivered to the coating applicator or as applied to the substrate, whichever is greater.

IX.A.10. Compliance Calculation Procedures

IX.A.10.a. Compliance with this section shall be determined on a daily basis. Sources may request a revision to the State Implementation Plan for longer times for compliance determination.

IX.A.10.b. Compliance calculation procedures shall follow the guidance in "Procedure for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings," EPA-450/3-84/019. In addition, for add-on controls or other compliance alternatives, calculation procedures shall follow the guidance of Section IX.A.5.f of this regulation.

IX.A.11. The requirements of Subsections IX.A.1 through IX.A.10 of this regulation apply to each category of surface coating as specified in Sections IX.B through IX.M. The requirements of IX.A. 7 through 10 apply to the category of IX.N.

IX.A.12. The Division shall approve utilization of alternative compliance methods to the following sources pursuant to this Section IX.

IX.A.12.a. Lexmark International, Inc. shall be allowed to utilize the alternative compliance method of crossline averaging for processes and operations within the Manufactured Metal Parts and Metal products (Subgroup L) and within the Plastic Film Coating Operations (Subgroup J). The emission trading requirements of Regulation Number 3, Part A, Section V shall be met , and utilization of the alternative compliance method shall be subject to the following generic conditions, which shall be written and specifically described as enforceable permit terms and conditions in its permits:

IX.A.12.a.(i) The alternative compliance method shall result in an actual reduction that is equivalent to the actual reduction that would otherwise be achieved on a line-by-line basis pursuant to this Regulation Number 7.

IX.A.12.a.(ii) Credit shall not be received for downtime; however, credit is allowed for emission reductions from enforceable production limits.

IX.A.12.a.(iii) Cross line averaging shall be used only across lines of the same control technique guidance group. Lexmark shall use cross line averaging between Metal Parts and Metal Products lines or between Plastic Film Coating lines. Lexmark shall not use cross line averaging where the emissions from Plastic film coating lines are averaged with Metal Parts and Metal Products lines.

IX.A.12.a.(iv) The emission trading policy set forth in Regulation Number 3, V, Part A, shall be met on a daily weighted average.

IX.A.12.a.(v) Sources subject to Best Available Control Technology (BACT), and Lowest Achievable Emission Rate (LAER) shall not use cross line averaging.

IX.A.12.a.(vi) To determine reduction over baseline, VOC emissions shall be expressed according to Regulation Number 7, Section IX.(A).(5).(f), as lbs/gallons solids.

IX.A.12.a.(vii) Monthly records shall be kept at the source to verify ongoing compliance with these conditions. The recordkeeping format shall be approved by the Division.

IX.A.12.a.(viii) An annual report demonstrating ongoing compliance with this regulation and all permit terms shall be filed with the Division. The report format shall be approved by the Division and specifically described in the permit.

IX.A.12.a.(ix) The Division shall issue a permit with Federally enforceable terms and conditions to Lexmark limiting Lexmark's alternative compliance method emissions to those allowable under Subpart L or J as appropriate, of this Regulation Number 7.

IX.A.12.a.(x) Commercial and Product quality control laboratory equipment are exempt from APEN filing and construction permit requirements under Regulation Number 3, Part A. II. D. 1(i), and Regulation Number 3, Part B, III.D.1.a; and from construction permit requirements under Regulation Number 3, Part B, III.D.1(i). Qualifying sources shall be exempt from Regulation Number 7, Section IX. A. 6.

IX.A.12.a.(xi) Nothing in the alternative compliance method is intended to relax any emissions limitation of this Regulation Number 7.

IX.B. Automobile and Light-Duty Truck Assembly Plants

IX.B.1. Definitions

IX.B.1.a. “Application Area” means the area where the surface coating is applied by spraying, dipping or flow coating.

IX.B.1.b. “Automobile” means a passenger motor-vehicle or a derivative of same, capable of seating twelve (12) or fewer passengers, and having at least two driven wheels.

IX.B.1.c. “Automobile Assembly Facility” means a facility where parts (including assembled or partially assembled components) of automobiles are received, and finished automobiles are produced, partially or wholly by an assembly line.

IX.B.1.d. “Light-Duty Truck” means any motor vehicle rated at 8,500 pounds (3,855 kilograms) gross vehicle weight or less, and having at least two driven wheels, which is designed primarily for purposes of transportation of property or is a derivative of such vehicles. It includes, but is not limited to, pickup trucks, vans, and window vans rated at 8,500 pounds gross vehicular weight or less.

IX.B.1.e. "Light-Duty Truck Assembly Facility" means a facility where parts (including assembled or partially assembled components) of light-duty trucks are received, and finished light-duty trucks are produced, partially or wholly by an assembly line.

IX.B.2. Applicability

This subsection applies to all assembly and subassembly lines in an automobile or light-duty truck assembly facility, including those for frames, small parts, wheels, and main body parts. This subsection applies only to the manufacture of new vehicles.

IX.B.3. Emission Limitations

| | **Kg/lc** | **Lb/gc** |
|---|---|---|
| Prime application, flashoff area, and oven | 0.23 | 1.9 |
| Topcoat application area, flashoff area, and oven | 0.34 | 2.8 |
| Final repair application, flashoff area and oven | 0.58 | 4.8 |

IX.B.4. Coatings other than primer, surfacer (guidecoat), topcoat and final repair shall be considered under the miscellaneous metal parts Subsection IX.L.

IX.B.5. For topcoat application, if a complying coating is not used to meet the emission limit of Subsection IX.B.3, then:

IX.B.5.a. the alternate method shall meet an emission limit of 15.1 lb VOC/gal. solids deposited on the coated part; and

IX.B.5.b. compliance shall be determined on a daily weighted average basis.

IX.B.6. Topcoat operation shall include all spray booths, flash-off areas and ovens in which topcoat is applied, dried and cured, except for final offline repair.

IX.C. Can Coating Operations

IX.C.1. Definitions

IX.C.1.a. "Can Coatings" means any coatings containing organic materials and applied -- or intended for application -- by spray, roller, or other means onto the inside and/or outside surfaces of formed cans and components of cans.

IX.C.1.b. "End Sealing Compound" means a substance which is coated onto can ends and which functions as a seal when the end is assembled onto the can.

IX.C.1.c. "Exterior Base Coat" means a coating applied to the exterior of a can to provide protection to the metal and/or to provide background for any lithographic or printing operation.

IX.C.1.d. "Interior Base Coat" means the initial coating applied to the interior surface of a can by roller coater or spray.

IX.C.1.e. "Interior Body Spray" means a coating sprayed onto the interior surface of the can body to provide a protective film between the can and its contents.

IX.C.1.f. "Overvarnish" means a coating applied directly over ink to reduce the coefficient of friction, provide gloss, protect against abrasion, enhance product quality, and protect against corrosion.

IX.C.1.g. "Three-Piece Can Side Seam Spray" means a coating sprayed onto the interior and/or exterior of a can body seam on a three-piece can to protect the exposed metal.

IX.C.1.h. "Two-Piece Can Exterior End Coat" means a coating applied to the exterior of the bottom end of a two-piece can.

IX.C.2. Applicability

This subsection applies to coating applicator(s), and oven(s) of sheet can or end coating lines involved in sheet basecoat (exterior and interior) and over varnish, two-and three-piece can interior body spray, two-piece can exterior end (spray or roll coat), three-piece can side-seam spray, and end sealing compound operations.

IX.C.3. Emission Limitations

| **Can Coating** | **Kg/lc** | **Lb/gc** |
|---|---|---|
| Sheet base coat (exterior and interior) and overvarnish two-piece can exterior (base coat and overvarnish) | 0.34 | 2.8 |
| Two and three-piece can interior body spray, two-piece can exterior end (spray or roll coat) | 0.51 | 4.2 |
| Three-piece can side-seam spray | 0.66 | 5.5 |
| End sealing compound | 0.44 | 3.7 |
| Any additional coats | 0.51 | 4.2 |

IX.D. Coil Coating Operations

IX.D.1. Definitions

IX.D.1.a. "Coil Coating" means any surface coating applied by spray, roller, or other means onto one or both surfaces of flat metal sheets or strips that come in rolls or coils.

IX.D.1.b. "Quench Area" means a chamber where the hot metal exiting the oven is cooled by either a spray of water or a blast of air followed by water cooling.

IX.D.2. Applicability

This subsection applies to the coating applicator(s), oven(s), and quench area(s) of coil coating operations involved in primer, intermediate, top-coat or single-coat operations.

IX.D.3. Emission Limitations:

| **Coil Coating** | **Kg/lc** | **Lb/gc** |
|---|---|---|
| Any coat (primer, intermediate coat, topcoat, single coat) | 0.31 | 2.6 |

IX.E. Fabric Coating Operations

IX.E.1. Definitions

IX.E.1.a. "Fabric Coating" means the process of coating or impregnating the full, usable surface of a fabric web or sheet to impart properties that are not initially present such as strength, stability, water or acid repellency, or appearance. "Fabric Coating" excludes those processes normally included under fabric finishing (e.g. dyeing, treating for stain and wrinkle resistance, etc.).

IX.E.2. Applicability

This subsection applies to fabric coating lines which includes, but is not limited to, coaters and drying ovens.

IX.E.3. Emission Limitations

| | **Kg/lc** | **Lb/gc** |
|---|---|---|
| Fabric Coating Line | 0.35 | 2.9 |

IX.F. Large Appliance Coating Operations

IX.F.1. Definition

IX.F.1.a. "Large Appliances" includes doors, cases, lids, panels, interior support parts, and any other large (greater than one square decimeter (15.5 square inches)) coated surfaces of residential and commercial washers, dryers, ovens, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners, and all other products under SIC Code 363 according to the "Standard Industrial Classification Manual", Executive Office of the President, Office of Management and Budget, designated by convention of the industry as large appliances.

IX.F.2. Applicability

This subsection applies to all large appliance coating lines.

IX.F.3. Emission Limitations

| | **Kg/lc** | **Lb/gc** |
|---|---|---|
| Large Appliance Coating Line; prime, single or topcoat application area, flashoff area, and oven | 0.34 | 2.8 |

IX.G. Magnet Wire Coating Operations

IX.G.1. Definition

IX.G.1.a. "Magnet Wire Coating" means those operations which apply a coating of electrically insulating varnish or enamel (or similar substance) to wire which is known as "magnet wire." Magnet wire is usually copper or aluminum, and is used for electric motors, generators, transformers, magnets, and related products.

IX.G.2. Applicability

This subsection applies to, but is not limited to, coaters and drying ovens of magnet wire coating operations.

IX.G.3. Emission Limitations

| | **Kg/lc** | **Lb/gc** |
|---|---|---|
| Magnetic wire coating operation | 0.20 | 1.7 |

IX.H. Metal Furniture Coating Operations

IX.H.1. Definitions

IX.H.1.a. "Metal Furniture" means furnishings commonly considered furniture, for domestic, business, and/or institutional use, which have one or more essential, major components made of metal. "Metal furniture" includes, but is not limited to, tables, chairs, wastebaskets, beds, desks, lockers, shelving, cabinets, room dividers, clothing racks, chests of drawers, and sofas.

IX.H.1.b. "Metal Furniture Coating" means applying a "surface coating" to "metal furniture" as defined above. It excludes coating of non-metal components.

IX.H.2. Applicability

This subsection applies to all metal furniture coating lines.

IX.H.3. Emission Limitations

| | **Kg/lc** | **Lb/gc** |
|---|---|---|
| Metal Furniture Coating Line: All coats (including prime, single, and topcoat) | 0.36 | 3.0 |

IX.I. Paper Coating Operations

IX.I.1. Definition

"Paper Coating" means impregnating or applying a uniform layer of "surface coating" to paper. It includes, but is not limited to, the production of: coated, glazed, decorated, and varnished paper; carbon and pressure-sensitive copy papers; paper adhesive-labels and tapes; blue-print; photographic and copier paper. It also includes coating of metal foil such as gift wrap and packaging. Paper coating does not include impregnation using a batch dipping process.

IX.I.2. Applicability

This subsection applies to paper coating lines, which includes, but is not limited to, coaters and drying ovens.

IX.I.3. Emission Limitations

| | **Kg/lc** | **Lb/gc** |
|---|---|---|
| Paper Coating Line | 0.35 | 2.9 |

IX.J. Plastic-Film Coating Operations

IX.J.1. Definition

IX.J.1.a. "Plastic-Film Coating" means applying a uniform layer of "surface coating" to a flexible web or sheet of thin plastic substance, excluding all rubbers and vinyls* (polyvinyl chloride) except for the following two categories of vinyl products: (1) vinyl tapes and (2) vinyls coated with an adhesive or pressure-sensitive coating. It includes, but is not limited to: plastic typewriter ribbons, photographic film, adhesive tapes, and magnetic recording tapes. (*see Subsection K.)

IX.J.2. Applicability

This subsection applies to, but is not limited to, coaters and drying ovens of plastic-film coating lines.

IX.J.3. Emission Limitations

| | **Kg/lc** | **Lb/gc** |
|---|---|---|
| Plastic-Film Coating Line | 0.35 | 2.9 |

IX.K. Vinyl Coating Operations

IX.K.1. Definition

"Vinyl Coating" means applying a uniform layer, decorative or protective topcoat to a vinyl (polyvinyl chloride) coated fabric or vinyl sheet. It includes printing of same. Excluded are*: (1) the coating of same with adhesive or pressure-sensitive coatings and (2) vinyl tapes. (*see Subsection J).

IX.K.2. Application

This subsection applies to vinyl coating lines which includes, but is not limited to, coaters and drying ovens.

IX.K.3. Emission Limitations

| | **Kg/lc** | **Lb/gc** |
|---|---|---|
| Vinyl Coating Line | 0.45 | 3.8 |

IX.L. Manufactured Metal Parts and Metal Products

IX.L.1. General Provisions

IX.L.1.a. Applicability

This subsection applies to the application area(s), flashoff area(s), oven(s), and drying areas including (but not limited to) air and forced air drier(s) used in the surface coating of the metal parts and products listed below. This section applies to prime coat, top coat, and single coat operations. This section is applicable to surface coating of manufactured metal parts and metal products which include:

IX.L.1.a.(i) Large farm machinery (harvesting, fertilizing, and planting machines, tractors, combines, etc.);

IX.L.1.a.(ii) Small-farm, lawn and garden machinery (lawn and garden tractors, lawn mowers, rototillers, etc.);

IX.L.1.a.(iii) Small appliances (fans, mixers, blenders, crock pots, dehumidifiers, vacuum cleaners, etc.);

IX.L.1.a.(iv) Commercial machinery (office equipment, computers and auxiliary equipment, typewriters, calculators, vending machines, etc.);

IX.L.1.a.(v) Industrial machinery (pumps, compressors, conveyor components, fans, blowers, transformers, etc.);

IX.L.1.a.(vi) Fabricated metal products (metal covered doors, frames, etc.);

IX.L.1.a.(vii) Furniture hardware made of metal for use with non-metal furniture; and

IX.L.1.a.(viii) Any other industrial category which coats metal parts or products under the standard industrial classification code of major group 33 (primary metal industries), major group 34 (fabricated metal products), major group 35 (non-electric machinery), major group 36 (electrical machinery), major group 37 (transportation equipment), major group 38 (miscellaneous instruments), and major group 39 (miscellaneous manufacturing industries), according to the "Standard Industrial Classification Manual" Executive Office of the President, Office of Management and Budget.

IX.L.1.b. Exemptions

IX.L.1.b.(i) This Subsection L is not applicable to the surface coating of the following metal parts and products inasmuch as these are previously covered in Subsections IX.B., C., D., F, G, and H., respectively:

IX.L.1.b.(i)(A) Automobiles and light-duty trucks

IX.L.1.b.(i)(B) Metal cans

IX.L.1.b.(i)(C) Flat metal sheets and strips in the form of rolls or coils

IX.L.1.b.(i)(D) Large appliances

IX.L.1.b.(i)(E) Magnet wire for use in electrical machinery

IX.L.1.b.(i)(F) Metal furniture

IX.L.1.b.(ii) This Subsection L is not applicable to the following special purpose coatings:

IX.L.1.b.(ii)(A) Division-approved exemptions for high performance coatings on a case-by-case basis.

IX.L.1.b.(ii)(B) Full exterior repainting of automobiles and light-duty trucks if fewer than 18 vehicles are painted per day.

IX.L.1.c. Definitions

For the purpose of this subsection, the following definitions apply:

IX.L.1.c.(i) "Air Dried Coating" means coatings which are dried by the use of air or forced warm air at temperatures up to 90°C (194°F);

IX.L.1.c.(ii) "Clear Coat" means a coating, which lacks color and opacity or a coating which is transparent;

IX.L.1.c.(iii) "Coating Application System" means all operations and equipment which apply, convey, and dry a surface coating, including, but not limited to, spray booths, flow coaters, flashoff areas, air dryers and ovens;

IX.L.1.c.(iv) "Extreme Environmental Conditions" means exposure to any of the following: temperatures consistently above 95°C, detergents, abrasive and scouring agents, solvents, and corrosive environments;

IX.L.1.c.(v) "Extreme Performance Coatings" means coatings designed for extreme environmental conditions.

IX.L.2. Provisions for Specific Processes

IX.L.2.a. No owner or operator of a facility or operation engaging in the surface coating of manufactured metal parts or metal products may operate a coating application system subject to this regulation that emits VOC in excess of:

IX.L.2.a.(i) Clear coatings: 0.52 kg/1c(4.3 lb/gc)

IX.L.2.a.(ii) Extreme Performance Coatings: 0.42 kg/1c (3.5 lb/gc)

IX.L.2.a.(iii) Air-Dried Coatings: 0.42 kg/1c (3.5 lb/gc)

IX.L.2.a.(iv) Other coatings and systems: 0.36 kg/1c (3.0 lb/gc) delivered to a coating applicator for all other coatings and coating application systems.

IX.L.2.b. If more than one emission limitation in Subparagraph 2.a. applies to a specific coating, then the least stringent emission limitation shall be applied.

IX.L.2.c . Pioneer Metal Finishing, Inc., a surface coating operation, is authorized pursuant to Regulation Number 3, Part A, Section V and Regulation Number 7, Section II.D.1.a to use up to twenty (20) tons of certified emission reduction credits of volatile organic compounds (VOC) as an alternative compliance method to satisfy the surface coating emission limitations of Regulation Number 7 in accordance with and upon demonstration of the conditions set forth below:

IX.L.2.c.(i) Certified emission reduction credits for VOCs (methanol) to be used in this transaction were formerly owned by the Coors Brewing Company, registered and issued in Emissions Reduction Credit Permit 91AR120R on July 25, 1994;

IX.L.2.c.(ii) Those emission reduction credits were originally obtained by Coors from Verticel, a company that produced honeycomb packaging material and was located within five miles of the PMF facility;

IX.L.2.c.(iii) The use of these VOC emission reduction credits identified above shall be used to satisfy VOC limitations of certain specified surface coatings in excess of Control Technique Guidance as specified in Regulation Number 7, Section IX.L.2.a and Section IX.A.6.b, and applicable to the Pioneer Metal finishing operations;

IX.L.2.c.(iv) Such emission reduction credits identified above will be used by PMF to achieve compliance with Regulation Number 7 to compensate for ozone precursor emission of VOCs from non-compliant coatings which meet the emission trading requirements of Regulation Number 3. In order to satisfy the photochemical reactivity equivalency requirement of VOC trades, the methanol VOC ERCs will be reduced on a ratio of 1.1:1 for VOCs of toluene, ethylbezene, xylene and ketones emitted from non-compliant coatings. All other VOCs involved in this transaction are considered to be of the same degree of photochemical reactivity;

IX.L.2.c.(v) The requirement in Regulation Number 3, Part A, Section V.F.2 shall not apply to this transaction;

IX.L.2.c.(vi) This transaction is only valid within the Denver/Boulder nonattainment area as described at 40 CFR 81, Subchapter C-Air Programs, Subpart C-Section 107 Attainment Status Designations, Section 81.306;

IX.L.2.c.(vii) This transaction shall be calculated upon a pound for pound basis and averaged over a maximum 24-hour period.

IX.L.2.c.(viii) This transaction shall be effective upon approval by the U.S. Environmental Protection Agency as a revision to the Colorado State Implementation Plan and after issuance of a State Construction Permit incorporating, but not limited to, the conditions and requirements of the Section;

IX.L.2.c.(ix) This transaction may not be used to satisfy any current or future requirements of NSPS, BACT, LAER, or MACT requirements of HAPs which may apply to PMF, except that this transaction may be used to satisfy control technique guidance or RACT requirements contained in Regulation Number 7 which are applicable to PMF;

IX.L.2.c.(x) This transaction shall not interfere with any applicable requirement concerning attainment and reasonable further progress in the Colorado State Implementation Plan or any other applicable requirements of the Clean Air Act;

IX.L.2.c.(xi) This transaction shall be registered and enforced through a State Construction Permit issued to Pioneer Metal Finishing, Inc. containing, but not limited to the conditions and limitations set forth in this Section;

IX.L.2.c.(xii) Such state Construction Permit issued to Pioneer Metal Finishing, Inc. shall specify, among other, things the necessary monitory, recordkeeping and reporting requirements to insure that the emission reduction credits are applied in accordance with the conditions and requirements of this Section;

IX.L.2.c.(xiii) The state Construction Permit shall allow a daily maximum limitation of 160 lbs. of VOC emissions from non-compliant surface coatings and an annual limitation of 40,000 lbs. of non-compliant VOC emissions. The annual limitation shall be calculated on a 12-month rolling total calculated on the first day of each month using the previous 12 months.

IX.L.2.c.(xiv) The state Construction Permit shall limit the VOC-HAP emissions to less than ten (10) per year of any one HAP or twenty-five (25) tons per year of any combination of HAP emissions; and

IX.L.2.c.(xv) PMF will maintain records of daily and monthly totals of non-compliant surface coatings used in its operation and report such usages on an annual basis to the Division or as otherwise requested.

IX.M. Flat Wood Paneling Coating.

IX.M.1. Definitions

IX.M.1.a. "Class II Hardboard Paneling Finish" means finishes which meet the specifications of Voluntary Product Standard PS-59-73 as approved by the American National Standards Institute.

IX.M.1.b. "Coating Application System" means all operations and equipment which apply, convey, and dry a surface coating, including, but not limited to, spray booths, flow coaters, conveyers, flashoff areas, air dryers and ovens.

IX.M.1.c. "Hardboard" is a panel manufactured primarily from inter-felted ligno-cellulosic fibers which are consolidated under heat and pressure in a hot press.

IX.M.1.d. "Hardboard Plywood" is plywood whose surface layer is a veneer of hardwood.

IX.M.1.e. "Natural Finish Hardwood Plywood Panels" means panels whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.

IX.M.1.f. "Printed Interior Panels" means panels whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.

IX.M.1.g. "Thin Particleboard" is a manufactured board 1/4 inch or less in thickness made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure.

IX.M.1.h. "Tileboard" means paneling that has a colored waterproof surface coating.

IX.M.2. Applicability

This subsection applies to all flat wood manufacturing and surface finishing facilities that manufacture printed interior panels made of hardwood plywood and thin particle board; natural finish hardwood plywood panels, or hardboard paneling with Class II finishes. This subsection does not apply to the manufacture of exterior siding, tileboard, or particleboard used as a furniture component.

IX.M.3. Emission Limitations

IX.M.3.a. 2.9 kg per 100 square meters of coated finished product (6.0 lb/1,000 sq. ft) from printed interior panels, regardless of the number of coats applied;

IX.M.3.b. 5.8 kg per 100 square meters of coated finished product (12.0 lb/1,000 sq. ft.) from natural finish hardwood plywood panels, regardless of the number of coats applied; and

IX.M.3.c. 4.8 kg per 100 square meters of coated finished product (10.0 lb/1,000 sq. ft.) from Class II finishes on hardboard panels, regardless of the number of coats applied.

IX.N. Manufacture of Pneumatic Rubber Tires

IX.N.1. Definitions

IX.N.1.a. "Bead Dipping" means the dipping of an assembled tire bead into a solvent-based cement.

IX.N.1.b. "Green Tires" means assembled tires before holding and curing have occurred.

IX.N.1.c. "Green Tire Spraying" means the spraying of green tires, both inside and outside, with release compounds which help remove air from the tire during molding and prevent the tire from sticking to the mold after curing.

IX.N.1.d. "Pneumatic Rubber Tire Manufacture" means the production of pneumatic rubber, passenger type tires on a mass production basis.

IX.N.1.e. "Passenger Type Tire" means agricultural, airplane, industrial, mobile home, light and medium duty truck, and passenger vehicle tires with a bead diameter up to 20.0 inches and cross section dimension up to 12.8 inches.

IX.N.1.f. "Tread End Cementing" means the application of a solvent-based cement to the tire tread ends.

IX.N.1.g. "Undertread Cementing" means the application of a solvent-based cement to the underside of a tire tread.

IX.N.1.h. "Water Based Sprays" means release compounds, sprayed on the inside and outside of green tires, in which solids, water, and emulsifiers have been substituted for organic solvents.

IX.N.2. Applicability

This section applies to VOC emissions from the following operations in all pneumatic rubber tire facilities: undertread cementing, tread end cementing, bead dipping, and green tire spraying.

The provisions of this section do not apply to the production of specialty tires for antique or other vehicles when produced on an irregular basis or with short production runs. This exemption applies only to tires produced on equipment separate from normal production lines for passenger type tires.

IX.N.3. Provisions for Specific Processes

IX.N.3.a. The owner or operator of an undertread cementing, tread end cementing, or bead dipping operation subject to this regulation shall:

IX.N.3.a.(i) Install and operate a capture system, designed to achieve maximum reasonable capture, up to 85 percent by weight of VOC emitted, from all undertread cementing, tread end cementing and bead dipping operations. Maximum reasonable capture shall be consistent with the following documents:

IX.N.3.a.(i)(A) Industrial Ventilation, A Manual of Recommended Practices, l7th Edition, American Federation of Industrial Hygienists, 1982.

IX.N.3.a.(i)(B) Recommended Industrial Ventilation Guidelines, U.S. Department of Health, Education and Welfare, National Institute of Occupational Safety and Health, January 1976.

IX.N.3.a.(ii) Install and operate a control device that meets the requirements of one of the following:

IX.N.3.a.(ii)(A) A carbon adsorption system designed and operated in a manner such that there is at least a 95.0 percent removal of VOC by weight from the gases ducted to the control device; or,

IX.N.3.a.(ii)(B) An incineration system that oxidizes at least 90.0 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) which enter the incinerator to carbon dioxide and water.

IX.N.4. The owner or operator of a green tire spraying operation subject to this regulation must implement one of the following means of reducing volatile organic compound emissions:

IX.N.4.a. Substitute water-based sprays for the normal solvent-based mold release compound; or,

IX.N.4.a.(i) Install a capture system designed and operated in a manner that will capture and transfer at least 90.0 percent of the VOC emitted by the green tire spraying operation to a control device; and,

IX.N.4.a.(ii) In addition to Part (i), install and operate a control device that meets the requirements of one of the following:

IX.N.4.a.(ii)(A) a carbon adsorption system designed and operated in a manner such that there is at least 95.0 percent removal of VOC by weight from the gases ducted to the control device; or,

IX.N.4.a.(ii)(B) an incineration system that oxidizes at least 90 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) to carbon dioxide and water.

IX.N.5. Testing of capture system efficiency shall meet the requirements of Subsection IX.A.5.e.

IX.N.6. Control devices shall meet the applicable requirements, including recordkeeping, of Subsections IX.A.3.a, b, c, and e, and IX.A.8.a and b.

IX.N.7. The applicable EPA reference methods I through 4, and 25, of 40 CFR Part 60, shall be be used to determine the efficiency of control devices.

X. **Use of Solvents for Degreasing and Cleaning**

X.A. General Provisions

X.A.1. Applicability

The provisions of this section apply to cold cleaners, non-conveyorized vapor degreasers, and conveyorized degreasers. Open top vapor degreasers are a subset of non-conveyorized vapor degreasers. The owner or operator of a unit subject to this section shall ensure that no such unit is used unless the requirements of this section are satisfied.

X.A.2. Definitions

X.A.2.a. "Cold-Cleaner" means a container of non-aqueous liquid solvent held below its boiling point, which is designed, used, or intended for cleaning solid objects in a batch-loaded process. A "cold-cleaner" may have provisions for heating the solvent. It does not include vapor degreasers or continuously loaded conveyorized degreasers.

X.A.2.b. "Conveyorized Degreaser" means an apparatus that performs degreasing or other cleaning functions through the use of non-aqueous liquid solvent and/or solvent vapors within a container, and which has a conveyor mechanism allowing continuous loading of items conveyed into and out of the solvent.

X.A.2.c. "Freeboard" in a vapor degreaser means the vertical distance from the top of the vapor zone (as established by normal operations within the specifications of the degreaser manufacturer) to the top of the degreaser.

For cold-cleaners "freeboard" means the vertical distance from the surface of the solvent liquid to the top of the degreaser.

If all sides are not even, the vertical distance to the top of the lowest side shall be used to make the determination of freeboard.

X.A.2.d. "Freeboard Ratio" means the ratio of the freeboard to the width of the solvent surface.

X.A.2.e. "Non-Conveyorized Vapor Degreaser" means an apparatus, which uses non-aqueous solvent vapors within some type of container to degrease or otherwise clean solid objects in a batch-loaded process. It excludes continuously loaded conveyorized degreasers.

X.A.2.f. "Solvent Metal Cleaning" means the process of cleaning soils from metal surfaces by cold cleaning, conveyorized degreasing, or non-conveyorized vapor degreasing.

X.A.3. Transfer of waste solvent and used solvent

In any disposal or transfer of waste or used solvent, at least 80 percent by weight of the solvent/waste liquid shall be retained (i.e., no more than 20 percent of the liquid solvent/solute mixture shall evaporate or otherwise be lost during transfers).

X.A.4. Storage of waste solvent and used solvent

Waste or used solvent shall be stored in closed containers unless otherwise required by law.

X.A.5. Any control device shall meet the applicable requirements of Subsections IX.A.3.a, b, c, e and IX.A.8.a. and b.

X.B. Control of Solvent Cold-Cleaners

X.B.1. Control Equipment

X.B.1.a. Covers

X.B.1.a.(i) All cold-cleaners shall have a properly fitting cover.

X.B.1.a.(ii) Covers shall be designed to be easily operable with one hand under any of the following conditions:

X.B.1.a.(ii)(A) Solvent true vapor pressure is greater than 15 torr (0.3 psia) at 38°C (100°F).

X.B.1.a.(ii)(B) The solvent is agitated by an agitating mechanism.

X.B.1.a.(ii)(C) The solvent is heated.

X.B.1.b. Drainage Facility

X.B.1.b.(i) All cold-cleaners shall have a drainage facility that captures the drained liquid solvent from the cleaned parts

X.B.1.b.(ii) For cold-cleaners using solvent which has a vapor pressure greater than 32 torr (0.62 psia) measured at 38°C (100°F) either

X.B.1.b.(ii)(A) There shall be an internal drainage facility within the confines of the cold-cleaner, so that parts are enclosed under the (closed) cover to drain after cleaning, or if such a facility will not fit within,

X.B.1.b.(ii)(B) An enclosed, external drainage facility that captures the drained solvent liquid from the cleaned parts.

X.B.1.c. A permanent, clearly visible sign shall be mounted on or next to the cold-cleaner. The sign shall list the operating requirements.

X.B.1.d. Solvent spray apparatus shall not have a splashing, fine atomizing, or shower type action but rather should produce a solid, cohesive stream. Solvent spray shall be used at a pressure that does not cause excessive splashing.

For solvents with a true vapor pressure above 32 torr (0.62 psia) at 38°C (100°F), or, for solvents heated above 50°C (120°F), one of the following techniques shall be used:

X.B.1.d.(i) A freeboard ratio greater than or equal to 0.7.

X.B.1.d.(ii) A water or a non-volatile liquid cover. The cover liquid shall not be soluble in the solvent and shall not be more dense than the solvent and the depth of the cover liquid shall be sufficient to prevent the escape of solvent vapors.

X.B.2. Operating requirements

X.B.2.a. The cold-cleaner cover shall be closed whenever parts are not being handled within the cleaner confines.

X.B.2.b. Cleaned parts shall be drained for at least 15 seconds and/or until dripping ceases. Any pools of solvent shall be tipped out on the clean part back into the tank.

X.C. Control of Non-Conveyorized Vapor Degreasers

X.C.1. Control Equipment

X.C.1.a. The non-conveyorized vapor degreaser shall have a cover which shall be designed and operated so that it can be easily opened and closed through the use of mechanical assists such as spring loading, counterweights, etc.; opening and closing the cover shall not disturb the vapor zone.

X.C.1.b. Safety Switches

The following two types of switches shall be installed on vapor degreasers:

X.C.1.b.(i) Condenser flow switch and thermostat - (shuts off sump heat if the condenser coolant is either not circulating or is too warm); and

X.C.1.b.(ii) Spray safety switch - (shuts off spray pump if the vapor level drops more than four (4) inches).

X.C.1.c. Control Device

X.C.1.c.(i) For non-conveyorized vapor degreasers with an open area (with the cover open) of one square meter (10.8 $ft_2$) or less, either the freeboard ratio shall be greater than or equal to 0.75, or one of the control devices in (ii) below shall be used.

X.C.1.c.(ii) For non-conveyorized vapor degreasers with an open area (with the cover open) greater than one (1) square meter, (10.8 $ft_2$), at least one of the following control systems shall be used:

X.C.1.c.(ii)(A) Both a powered cover and a freeboard ratio greater than or equal to 0.75.

X.C.1.c.(ii)(B) A refrigerated chiller with a cooling capacity equivalent to or greater than the applicable specifications in Appendix C.

X.C.1.c.(ii)(C) An enclosed design: A system where the cover(s) or door(s) opens only when a dry part is entering or exiting the degreaser.

X.C.1.c.(ii)(D) A carbon adsorption system with ventilation greater than or equal to 15 cubic meters each minute per square meter (50 cfm/$ft_2$) of air/vapor area (when the cover(s) is [are] open), exhausting less than 25 parts per million (by volume) of solvent averaged over one complete adsorption cycle.

X.C.1.d. A permanent, clearly visible sign shall be mounted on or next to the degreaser. The sign shall list the operating requirements.

X.C.2. Operating Requirements

X.C.2.a. Keep cover closed at all times except when processing work loads into or out of the degreaser.

X.C.2.b. The following operations shall be performed to minimize solvent carry-out:

X.C.2.b.(i) Rack parts to allow full drainage.

X.C.2.b.(ii) Move parts as slowly as is practicable in and out of the degreaser. A maximum of one foot every five seconds by hand or a

maximum of 5.5 cm/sec. (10.8ft/min) for a mechanically operated system.

X.C.2.b.(iii) Allow the workload to clean in the vapor zone at least 30 seconds or until condensation ceases.

X.C.2.b.(iv) Tip out any pools of solvent that remain on the cleaned parts before removal from the vapor zone.

X.C.2.b.(v) Allow parts to dry within the degreaser at least 15 seconds and/or until visually dry.

X.C.2.c. Solvents shall not be used to clean porous or absorbent materials, for example, cloth, leather, wood, rope, etc.

X.C.2.d. Work loads shall not occupy more than half of the degreaser's open top area.

X.C.2.e. Spraying shall not be done above the vapor level.

X.C.2.f. Solvent leaks shall be repaired immediately, or the degreaser shall be shut down.

X.C.2.g. Exhaust ventilation shall not exceed twenty (20) cubic meters per minute per square meter (65.6 cfm per sq. ft.) of degreaser open area, unless greater exhaust rates are necessary to meet Occupational and Safety Health Act requirements. Ventilation fans shall not be used near the degreaser opening, unless necessary to meet Occupational and Safety Health Act requirements.

X.C.2.h. The water separator shall function so that no visible water is present in the solvent exiting the separator.

X.D. Control of Conveyorized Degreasers

X.D.1. Control Equipment

X.D.1.a. Control Device

For all conveyorized degreasers with a solvent surface area greater than two (2) square meters (21.5 square feet), the degreasing shall be controlled by at least one of the following:

X.D.1.a.(i) Carbon adsorption system, with ventilation greater or equal to 15 cubic meters per minute per square meter (49.2 cf/m $ft_2$) of air/vapor interface for vapor degreasers (of air/liquid interface for non-vapor types) when down-time covers are open, and exhausting less than 25 parts per million of solvent (by volume) averaged over a complete adsorption cycle.

X.D.1.a.(ii) For vapor degreasers only: a refrigerated chiller with a cooling capacity equivalent to or greater than the applicable specifications in Appendix D.

X.D.1.b. Prevention of Carry-out

A drying tunnel, tumbling basket(s), or other demonstrably effective method(s) shall be employed to prevent cleaned parts from carrying out solvent liquid or vapor.

X.D.1.c. Safety Switches

X.D.1.c.(i) The following two (2) switch-circuits (or equivalent) shall be installed.

X.D.1.c.(i)(A) A spray safety switch shall shut off the spray pump and/or the conveyor if the vapor level drops more than four (4) inches.

X.D.1.c.(i)(B) A vapor level control thermostat shall shut off sump heat when the vapor level rises too high.

X.D.1.c.(ii) All conveyorized degreasers shall have a condenser thermostat and flow-detector switch (or equivalent) which shuts off sump heat if coolant is too warm or is not circulating.

X.D.1.d. Minimized Openings: Degreaser entrance and exit openings shall silhouette work loads so that the average clearance between parts (or parts-and the edge of the degreaser opening) is either:

X.D.1.d.(i) less than 10 centimeters (4 inches) or;

X.D.1.d.(ii) less than 10 percent of the width of the opening

X.D.1.e. Covers shall be provided to close off all the entrance(s) and exit(s) when the conveyor is not in use.

X.D.1.f. A permanent, clearly visible sign shall be mounted on or next to the degreaser. The sign shall list the operating requirements.

X.D.2. Operating Requirements

X.D.2.a. Exhaust ventilation shall not exceed 20 $m^3$/minute per square meter of degreaser opening (65.6 cf/m per square foot), unless necessary to meet OSHA requirements. Work place fans shall not be located near, nor directed at degreaser openings, unless necessary to meet OSHA requirements. Exhaust flow shall be measured by EPA reference methods 1 and 2 of 40 CFR Part 60.

X.D.2.b. Carry-out emissions shall be minimized by:

X.D.2.b.(i) Racking parts in such a manner to achieve best drainage.

X.D.2.b.(ii) Maintaining the vertical component of conveyor speed at less than 3.3 meters per minute (10.8 feet per minute).

X.D.2.c. Repair solvent leaks immediately, or shut down the degreaser.

X.D.2.d. The water separator shall function with an efficiency sufficient to prevent water from being visible in the solvent exiting the separator.

X.D.2.e. Down-time cover(s) shall be placed over entrances and exits of conveyorized degreasers immediately after the conveyor and exhaust are shut down. Covers shall be retained in position until immediately before start-up.

## XI. Use of Cutback Asphalt

XI.A. Definitions

XI.A.1. "Asphalt or Asphalt Cement" The dark-brown to black cementatious material (solid, semi-solid, or liquid in consistency) of which the main constituents are bitumen's which occur naturally or as a residue of petroleum refining.

XI.A.2. "Asphalt Concrete" A waterproof and durable paving material composed of dried aggregate, which is evenly coated with hot asphalt cement.

XI.A.3. "Cutback Asphalt or Cutback Asphalt Cement" Any asphalt which has been liquefied by blending with a VOC, such as a petroleum solvent diluents or, in the case of some slow cure asphalts (Road Oils), which has been produced directly from the distillation of petroleum.

XI.A.4. "Emulsified Asphalt" Asphalt emulsions produced by combining asphalt and water with emulsifying agent.

Emulsified Asphalt or any other coating or sealant, including but not limited to those produced from petroleum or coal, which contain more than five (5) percent of oil distillate as determined by ASTM Method D-244 is included in this definition.

XI.A.5. "Penetrating Prime Coat" An application of low-viscosity liquid asphalt to an absorbent surface in order to prepare it for overlaying with a layer or layers of asphalt cement or asphalt emulsion and mineral aggregate paving materials.

XI.B. Limitations

XI.B.1. Applicability

The provisions of this Section XI. apply to the use and storage of cutback asphalt for the paving and maintenance of all public roadways (including alleys), private roadways, parking lots, and driveways only within ozone nonattainment areas.

XI.B.2. Storage

Stockpiles of aggregate mixed with cutback asphalt are permitted October 1 through February 28 (29). Such storage is not permitted March 1 through September 30 except where it can be demonstrated to the Division that such storage is necessary.

XI.B.3. Use

Cutback asphalt may be used for any paving purpose October 1 through February 28 (29). No person shall use cutback asphalt or any coating included in the definition of cutback asphalt in Subsection IX.A.3. March 1 through September 30 except as provided below:

XI.B.3.a. If used solely as a penetrating prime coat, or

XI.B.3.b. If the user can demonstrate to the Division that under the conditions of its intended use, there will be no emissions of volatile organic compounds to the ambient air.

XI.C. Recordkeeping

During the months of March through September, the person responsible for the use or storage of any cutback asphalt as permitted in Subparagraph 3.a. and b. and Paragraph 2. shall keep records of same, including type and amount of solvent(s) used.

## XII. Volatile Organic Compound Emissions from Oil and Gas Operations

XII.A. Applicability

XII.A.1. Except as provided in Section XII.A.2. through 5., this Section applies to oil and gas exploration and production operations, natural gas compressor stations and natural gas drip stations:

XII.A.1.a. that collect, store, or handle condensate in the 8-hour Ozone Control Area ~~(State Only: or any ozone nonattainment or attainment/maintenance area),~~

XII.A.1.b. that are located upstream of a natural gas plant,

XII.A.1.c. for which the owner or operator filed, or was required to file, an APEN pursuant to Regulation Number 3, and

~~XII.A.1.d. (State Only) that emit any amount of uncontrolled actual volatile organic compound emissions with the following exceptions.~~

~~XII.A.1.d.(i) (State Only) Volatile organic compounds emitted during the first 90 days from the date of first production for new and modified condensate storage tanks as defined in Section XII.B. shall be equipped with a control device pursuant to Section XII.D., and comply with applicable monitoring, recordkeeping, and reporting requirements; and~~

XII.A.1.d.(ii) All dehydrators regardless of uncontrolled actual emissions are subject to XII.H.

XII.A.2. Oil refineries are not subject to this Section XII.

XII.A.3. Natural gas-processing plants and qualifying natural gas compressor stations located in an ozone nonattainment or attainment maintenance area are subject to Sections XII.G. or XII.I.

XII.A.4. Glycol natural gas dehydrators located at an oil and gas exploration and production operation, natural gas compressor station, drip station or gas processing plant in an ozone nonattainment or attainment maintenance area are only subject to Sections XII.B. and XII.H.

XII.A.5. The requirements of this section XII.A shall not apply to any owner or operator in any calendar year in which the APENs for all of the atmospheric condensate storage tanks associated with the affected operations owned or operated by such person reflect a total of less than 30 tons-per-year of actual uncontrolled emissions of VOCs in the 8-Hour Ozone Control Area. Such requirements shall, however, apply to such owner or operator in any subsequent calendar year in which the APENs for atmospheric condensate storage tanks associated with such affected operations reflect a total of 30 tons per year or more of actual uncontrolled emissions of VOCs in the 8-Hour Ozone Control Area.

XII.B. Definitions Specific to Section XII

XII.B.1. “Affected Operations” means oil and gas exploration and production operations, natural gas compressor stations and natural gas drip stations to which this Section XII applies.

XII.B.2. “Air Pollution Control Equipment”, as used in this Section XII, means a combustion device or vapor recovery unit. Air pollution control equipment also means alternative emissions control equipment, pollution prevention devices and processes that comply with the requirements of Section XII.D.2.b. that are approved by the Division.

XII.B.3. "Atmospheric Storage Tanks or Atmospheric Condensate Storage Tanks" means a type of condensate storage tank that vents, or is designed to vent, to the atmosphere.

XII.B.4. "Auto-Igniter" means a device which will automatically attempt to relight the pilot flame in the combustion chamber of a control device in order to combust volatile organic compound emissions.

XII.B.5. "Calendar Week" shall mean a week beginning with Sunday and ending with Saturday.

XII.B.6. "Condensate Storage Tank" shall mean any tank or series of tanks that store condensate and are either manifolded together or are located at the same well pad.

XII.B.7. "Downtime" shall mean the period of time when a well is producing and the air pollution control equipment is not in operation.

XII.B.8. "Existing" shall mean any atmospheric condensate storage tank that began operation before February 1, 2009, and has not since been modified.

XII.B.9. "Glycol Natural Gas Dehydrator" means any device in which a liquid glycol (including, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water.

XII.B.10. "Modified or Modification" shall mean any physical change or change in operation of a stationary source that results in an increase in actual uncontrolled volatile organic compound emissions from the previous calendar year that occurs on or after February 1, 2009. For atmospheric condensate storage tanks, a physical change or change in operation includes but is not limited to drilling new wells and recompleting, refracturing or otherwise stimulating existing wells.

XII.B.11. "New" shall mean any atmospheric condensate storage tank that began operation on or after February 1, 2009.

XII.B.12. "Stabilized" when used to refer to stored condensate, means that the condensate has reached substantial equilibrium with the atmosphere and that any emissions that occur are those commonly referred to within the industry as "working and breathing losses".

~~XII.B.13. (State Only) "Surveillance System" means monitoring pilot flame presence or temperature in a combustion device either by visual observation or with an electronic device to record times and duration of periods where a pilot flame is not detected at least once per day.~~

XII.B.14. "System-Wide" when used to refer to emissions and emission reductions in Section XII.D., shall mean collective emissions and emission reductions from all atmospheric condensate storage tanks under common ownership within the 8-hour Ozone Control Area or other specific Ozone Nonattainment or Attainment Maintenance Area for which uncontrolled actual volatile organic compound emissions are equal to or greater than two tons per year.

XII.C. General Provisions to Section XII

XII.C.1. General Requirements for Air Pollution Control Equipment – Prevention of Leakage

XII.C.1.a. All air pollution control equipment used to demonstrate compliance with this Section XII. shall be operated and maintained consistent with manufacturer specifications and good engineering and maintenance practices. The owner or operator shall keep manufacturer specifications on file. In addition, all such air pollution control equipment shall be adequately designed and sized to achieve the control efficiency rates required by this Section XII and to handle reasonably foreseeable fluctuations in emissions of volatile organic compounds. Fluctuations in emissions that occur when the separator dumps into the tank are reasonably foreseeable.

XII.C.1.b. All condensate collection, storage, processing and handling operations, regardless of size, shall be designed, operated and maintained so as to minimize leakage of volatile organic compounds to the atmosphere to the maximum extent practicable.

XII.C.1.c. All air pollution control equipment used to demonstrate compliance with Section XII.D. must meet a control efficiency of at least 95%. Failure to properly install, operate, and maintain air pollution control equipment at the locations indicated in the Division-approved spreadsheet shall be a violation of this regulation.

XII.C.1.d. If a flare or other combustion device is used to control emissions of volatile organic compounds to comply with Section XII.D., it shall be enclosed, have no visible emissions, and be designed so that an observer can, by means of visual observation from the outside of the enclosed flare or combustion device, or by other convenient means, such as a continuous monitoring device, approved by the Division, determine whether it is operating properly.

XII.C.1.e. All combustion devices used to control emissions of volatile organic compounds to comply with Section XII.D. shall be equipped with and operate an auto-igniter as follows:

~~XII.C.1.e.(i) (State Only) For condensate storage tanks that are constructed or modified after May 1, 2009, and before January 1, 2017, and controlled by a combustion device, auto-igniters shall be installed and operational, beginning the date of first production after any new tank installation or tank modification.~~

~~XII.C.1.e.(ii) (State Only) For all existing condensate storage tanks controlled by a combustion device in order to comply with the emissions control requirements of Section XII.D.2., auto-igniters shall be installed and operational beginning May 1, 2009, for condensate storage tanks with actual uncontrolled emissions of greater than or equal to 50 tons per year, and beginning May 1, 2010, for all other existing condensate storage tanks controlled by a combustion device, or within 180 days from~~ first having installed the combustion device, whichever date comes later.

XII.C.1.e.(iii) All combustion devices installed on or after January 1, 2017, must be equipped with an operational auto-igniter upon installation of the combustion device.

~~XII.C.1.f. (State Only) If a combustion device is used to control emissions of volatile organic compounds, surveillance systems shall be employed and operational as follows:~~

~~XII.C.1.f.(i) (State Only) Beginning May 1, 2010, for all existing condensate storage tanks with uncontrolled actual emissions of 100 tons per year or more based on data from the previous twelve consecutive months.~~

~~XII.C.1.f.(ii) (State Only) For all new and modified condensate storage tanks controlled by a combustion device for the first 90 days surveillance systems shall be employed and operational beginning 180 days from the date of first production after the tank was newly installed, or after the well was newly drilled, re-completed, re-fractured or otherwise stimulated, if uncontrolled actual emissions projected for the first twelve months based on data from the first 90 days of operation from the condensate storage tank are 100 tons or more of uncontrolled VOCs.~~

XII.C.2. The emission estimates and emission reductions required by Section XII.D. shall be demonstrated using one of the following emission factors:

XII.C.2.a. In the 8-Hour Ozone Control Area

XII.C.2.a.(i) For atmospheric condensate storage tanks at oil and gas exploration and production operations, a default emission factor of 13.7 pounds of volatile organic compounds per barrel of condensate shall be used unless a more specific emission factor has been established pursuant to Section XII.C.2.a.(ii)(B). The Division may require a more specific emission factor that complies with Section XII.C.2.a.(ii)(B).

XII.C.2.a.(ii) For atmospheric condensate storage tanks at natural gas compressor stations and natural gas drip stations, a specific emission factor established pursuant to this Section XII.C.2.a.(ii) shall be used. A specific emission factor developed pursuant to Section XII.C.2.a.(ii)(B) may also be used for atmospheric storage tanks at oil and gas exploration and production operations and, once established, or required by the Division, shall be used for such operations.

XII.C.2.a.(ii)(A) For atmospheric condensate storage tanks at natural gas compressor stations and natural gas drip stations a source may use a specific emissions factor that was used for reporting emissions from the source on APENs filed on or before February 28, 2003. The Division may, however, require the source to develop and use a more recent specific emission factor pursuant to Section XII.C.2.a.(ii)(B) if such a more recent emission factor would be more reliable or accurate.

XII.C.2.a.(ii)(B) Except as otherwise provided in XII.C.2.a.(i), a specific emission factor shall be one for which the Division has no objection, and which is based on collection and analysis of a representative sample of condensate pursuant to a test method approved by the Division.

~~XII.C.2.b. (State Only) For any other Ozone Nonattainment Area or Attainment/Maintenance Areas~~

XII.D. Emission Controls

The owners and operators of affected operations shall employ air pollution control equipment to reduce emissions of volatile organic compounds from atmospheric condensate storage tanks associated with affected operations by the dates and amounts listed below. Emission reductions shall not be required for each and every unit, but instead shall be based on overall reductions in uncontrolled actual emissions from all the atmospheric storage tanks associated with the affected operations for which the owner or operator filed, or was required to file, an APEN pursuant to Regulation Number 3, due to either having exceeded reporting thresholds or retrofitting with air pollution control equipment in order to comply with system-wide control requirements.

~~XII.D.1. (State Only) New and Modified Condensate Tanks~~

~~Beginning February 1, 2009, owners or operators of any new or modified atmospheric condensate storage tank at exploration and production sites shall collect and control emissions by routing emissions to and operating air pollution control equipment pursuant to Section XII.D. The air pollution control equipment shall have a control efficiency of at least 95%, and shall control volatile organic compounds during the first 90 calendar days after the date of first production after the tank was newly installed, or after the well was newly drilled, re-completed, re-fractured or otherwise stimulated. The air pollution control equipment and associated monitoring equipment required pursuant to XII.C.1. may be removed after the first 90 calendar days as long as the source can demonstrate compliance with the applicable system-wide standard.~~

XII.D.2. System-Wide Control Strategy

XII.D.2.a. The owners and operators of all atmospheric condensate storage tanks that emit greater than two tons per year of actual uncontrolled volatile organic compounds and are subject to this Section XII.D.2.a. in the 8-hour Ozone Control Area ~~(State Only: or any other specific Ozone Nonattainment area or Attainment/Maintenance Area)~~ shall employ air pollution control equipment to reduce emissions of volatile organic compounds from atmospheric condensate storage tanks by the dates and amounts listed below. The dates and requisite reductions are as follows:

XII.D.2.a.(i) For the period May 1 through September 30, 2005 such emissions shall be reduced by 37.5% from uncontrolled actual emissions on a daily basis.

XII.D.2.a.(ii) For the period of May 1 through September 30 of 2006, such emissions shall be reduced by 47.5% from uncontrolled actual emissions on a daily basis.

XII. D.2.a.(iii) For the period of May 1 through September 30 of each year from 2007 through 2008, such emissions shall be reduced by 75% from uncontrolled actual emissions on a weekly basis.

XII.D.2.a.(iv) Emission reductions achieved between January 1 and April 30, 2005 shall be averaged with emission reductions achieved between October 1 and December 31, 2005. For these two time periods, emissions shall be reduced by 30% from uncontrolled actual emissions and shall be calculated as an average of the emission reductions achieved during the seven months covered by the two periods.

XII.D.2.a.(v) Emission reductions achieved between January 1 and April 30, 2006 shall be averaged with emission reductions achieved between October 1 and December 31, 2006. Emissions shall be reduced by 38% from uncontrolled actual emissions, calculated as an average of the emission reduction achieved during the seven months covered by the two periods.

XII.D.2.a.(vi) For the period between January 1, 2007 and April 30, 2007, such emissions shall be reduced by 38% from uncontrolled actual emissions , For the period between October 1, 2007, and December 31, 2007, such emissions shall be reduced by 60% from uncontrolled actual emissions, calculated for each period as an average of the emission reduction achieved during the months covered by each period.

XII.D.2.a.(vii) Beginning with the year 2008, and each year thereafter, emission reductions achieved between January 1 and April 30 shall be averaged with emission reductions achieved between October 1 and December 31. Emissions shall be reduced by 70% from uncontrolled actual emissions, calculated as an average of the emission reduction achieved during the seven months covered by the two periods with the exception of XII.D.2.a.(viii) - XII.D.2.a.(x).

XII.D.2.a.(viii) For the calendar weeks that include May 1, 2009 through April 30, 2010, such emissions shall be reduced by 81% from uncontrolled actual emissions on a calendar weekly basis from May 1 through September 30 and 70% from uncontrolled actual emissions on a calendar monthly basis during October 1 through April 30.

XII.D.2.a.(ix) For the calendar weeks that include May 1, 2010 through April 30, 2011, such emissions shall be reduced by 85% from uncontrolled actual emissions on a calendar weekly basis in the May 1 through September 30 and 70% from uncontrolled actual emissions on a calendar monthly basis during October 1 through April 30.

XII.D.2.a.(x) Beginning May 1, 2011 and each thereafter, such emissions shall be reduced by 90% from uncontrolled actual emissions on a calendar weekly basis in the May 1 through September 30 and 70% from uncontrolled actual emissions on a calendar monthly basis during October 1 through April 30.

XII.D.2.b. Alternative emissions control equipment and pollution prevention devices and processes installed and implemented after June 1, 2004, shall qualify as air pollution control equipment, and may be used in lieu of, or in combination with, combustion devices and/or vapor recovery units to achieve the emission reductions required by this Section XII.D.2.a., if the following conditions are met:

XII.D.2.b.(i) The owner or operator obtains a construction permit authorizing such use of the alternative emissions control equipment or pollution prevention device or process. The proposal for such equipment, device or process shall comply with all regulatory provisions for construction permit applications and shall include the following:

XII.D.2.b.(i)(A) A description of the equipment, device or process;

XII.D.2.b.(i)(B) A description of where, when and how the equipment, device or process will be used;

XII.D.2.b.(i)(C) The claimed control efficiency and supporting documentation adequate to demonstrate such control efficiency;

XII.D.2.b.(i)(D) An adequate method for measuring actual control efficiency; and

XII.D.2.b.(i)(E) Description of the records and reports that will be generated to adequately track emission reductions and implementation and operation of the equipment, device or process, and a description of how such matters will be reflected in the spreadsheet and annual report required by Sections XII.F.3. and XII.F.4.

XII.D.2.b.(ii) Public notice of the application is provided pursuant to Regulation Number 3, Part B, Section III.C.4.

XII.D.2.b.(iii) EPA approves the proposal. The Division shall transmit a copy of the permit application and any other materials provided by the applicant, all public comments, all Division responses and the Division's permit to EPA Region 8. If EPA fails to approve or disapprove the proposal within 45 days of receipt of these materials, EPA shall be deemed to have approved the proposal.

XII.E. Monitoring

The owner or operator of any condensate storage tank that is being controlled pursuant to this Section XII shall inspect or monitor the Air Pollution Control Equipment at least weekly to ensure that it is operating properly.

XII.E.1. Tanks controlled by Air Pollution Control Equipment other than a combustion device shall follow manufacturer's recommended maintenance. Air Pollution Control Equipment shall be periodically inspected to ensure proper maintenance and operation according to the Division-approved operation and maintenance plan.

XII.E.2. The owner or operator of any condensate storage tank that is being controlled pursuant to Section XII. shall inspect or monitor the Air Pollution Control Equipment at least weekly to ensure that it is operating. The inspection shall include the following:

XII.E.2.a. For combustion devices, a check that the pilot light is lit by either visible observation or other means approved by the Division. For devices equipped with an auto-igniter, a check that the auto-igniter is properly functioning;

XII.E.2.b. For combustion devices, a check that the valves for piping of gas to the pilot light are open;

~~XII.E.2.c. (State Only) In addition to complying with Sections XII.E.2.a. and XII.E.2.b., the owner or operator or tanks subject to the system-wide control strategy under Section XII.D.2.a. that have installed combustion devices may use a surveillance system to maintain records on combustion device operation.~~

XII.E.3. The owner or operator of all tanks subject to Section XII.D. shall document the time and date of each inspection, the person conducting the inspection, a notation that each of the checks required under this Section XII.E. were completed, description of any problems observed during the inspection, description and date of any corrective actions taken, and name of individual performing corrective actions. Further, all tanks subject to Section XII.D. shall comply with the following:

XII.E.3.a. For combustion devices, the owner or operator shall visually check for and document, on a weekly basis, the presence or absence of smoke;

XII.E.3.b. For vapor recovery units, the owner or operator shall check for and document on a weekly basis that the unit is operating and that vapors from the condensate tank are being routed to the unit;

XII.E.3.c. For all control devices, the owner or operator shall check for and document on a weekly basis that the valves for the piping from the condensate tank to the air pollution control equipment are open;

XII.E.3.d. For all atmospheric condensate storage tanks, the owner or operator shall check for and document on a weekly basis that the thief hatch is closed and latched.

XII.E.3.e. Beginning January 1, 2017, owners or operators of atmospheric condensate storage tanks with uncontrolled actual emissions of VOCs equal to or greater than six (6) tons per year based on a rolling twelve-month total must conduct and document audio, visual, olfactory ("AVO") inspections of the storage tank at the same frequency as liquids are loaded out from the storage tank. These inspections are not required more frequently than every seven (7) days but must be conducted at least every thirty one (31) days.

~~XII.E.4. (State Only) For atmospheric condensate storage tanks equipped with an surveillance system or other Division-approved monitoring system, the owner or operator shall check weekly that the system is functioning properly and that necessary information is being collected. Any loss of data or failure to collect required data may be treated by the Division as if the data were not collected.~~

XII.F. Recordkeeping and Reporting

The owner or operator of any atmospheric condensate storage tank subject to control pursuant to Section XII.D.2. shall maintain records and submit reports to the Division as required:

XII.F.1. The AIRS number assigned by the Division shall be marked on all condensate storage tanks required to file an APEN.

XII.F.2. If air pollution control equipment is required to comply with Section XII.D.2. visible signage shall be located with the control equipment identifying the AIRS number for each atmospheric condensate storage tank that is being controlled by that equipment.

XII.F.3. Recordkeeping for Tanks Subject to the System-Wide Control Strategy under Section XII.D.2.

The owner or operator shall, at all times, track the emissions and specifically volatile organic compound emissions reductions on a calendar weekly and calendar monthly basis to demonstrate compliance with the applicable emission reduction requirements of Section XII.D.2. This shall be done by maintaining a Division-approved spreadsheet of information describing the affected operations, the air pollution control equipment being used, and the emission reductions achieved, as follows.

XII.F.3.a. The Division-approved spreadsheet shall:

XII.F.3.a(i) List all atmospheric condensate storage tanks subject to this Section XII by name and AIRS number, or if no AIRS number has been assigned the site location. The spreadsheet also shall list the monthly production volumes for each tank. The spreadsheet shall list the most recent measurement of such production at each tank, and the time period covered by such measurement of production.

XII.F.3.a(ii) List the emission factor used for each atmospheric condensate storage tank. The emission factors shall comply with Section XII.C.2.

XII.F.3.a(iii) List the location and control efficiency value for each unit of air pollution control equipment. Each atmospheric condensate storage tank being controlled shall be identified by name and an AIRS number.

XII.F.3.a(iv) List the production volume for each tank, expressed as a weekly and monthly average based on the most recent measurement available. The weekly and monthly average shall be calculated by averaging the most recent measurement of such production, which may be the amount shown on the receipt from the refinery purchaser for delivery of condensate from such tank, over the time such delivered condensate was collected. The weekly and monthly average from the most recent measurement will be used to estimate weekly and monthly volumes of controlled and uncontrolled actual emissions for all weeks and months following the measurement until the next measurement is taken.

XII.F.3.a(v) Show the calendar weekly and calendar monthly-uncontrolled actual emissions and the calendar weekly and calendar monthly controlled actual emissions for each atmospheric condensate storage tank.

XII.F.3.a(vi) Show the total system-wide calendar weekly and calendar monthly-uncontrolled actual emissions and the total system-wide calendar weekly and calendar monthly controlled actual emissions.

XII.F.3.a(vii) Show the total system-wide calendar weekly and calendar monthly percentage reduction of emissions.

XII.F.3.a(viii) Note any downtime of air pollution control equipment, and shall account for such downtime in the weekly control efficiency value and emission reduction totals. The notations shall include the date, time and duration of any scheduled downtime. For any unscheduled downtime, the spreadsheet shall record the date and time the downtime was discovered and the date and time the air pollution control equipment was last observed to be operating.

XII.F.3.a(ix) Be maintained in a manner approved by the Division and shall include any other information requested by the Division that is reasonably necessary to determine compliance with this Section XII.

XII.F.3.a(x) Be updated on a calendar weekly and calendar monthly basis and shall be promptly provided by e-mail or fax to the Division upon its request. The U.S. mail may also be used if acceptable to the Division.

XII.F.3.b. Failure to properly install, operate, and maintain air pollution control equipment at the locations indicated in the spreadsheet shall be a violation of this regulation.

XII.F.3.c. A copy of each calendar weekly and calendar monthly spreadsheet shall be retained for five years. A spreadsheet may apply to more than one week if there are no changes in any of the required data and the spreadsheet clearly identifies the weeks it covers. The spreadsheet may be retained electronically. However, the Division may treat any loss of data or failure to maintain the Division-approved spreadsheet, as if the data were not collected.

XII.F.3.d. Each owner or operator shall maintain records of the inspections required pursuant to Section XII.E. and retain those records for five years. These records shall include the time and date of the inspection, the person conducting the inspection, a notation that each of the checks required under Section XII.C. and XII.E. were completed and a description of any problems observed during the inspection, and a description and date of any corrective actions taken.

~~XII.F.3.e.~~ ~~(State Only) Each owner or operator shall maintain records of required surveillance system or other monitoring data and shall make these records available promptly upon Division request.~~

~~XII.F.3.f.~~ ~~(State Only) Each owner or operator shall maintain records on when an atmospheric condensate storage tank is newly installed, or when a well is newly drilled, re-completed, re-fractured or otherwise stimulated. Records shall be maintained per well associated with each tank and the date of first production associated with these activities.~~

XII.F.4. Reporting for Tanks Subject to the System-Wide Control Strategy under Section XII.D.2.a.

On or before April 30, 2006, and semi-annually by April 30 and November 30 of each year thereafter, each owner or operator shall submit a report using Division-approved format describing the air pollution control equipment used during the preceding calendar year (for the April 30 report) and during the preceding ozone season (for the November 30 report) and how each company complied with the emission reductions required by Section XII.D.2. during those periods for the 8-hour Ozone Control Area or other specific Ozone Non-attainment or Attainment-Maintenance area. Such reports shall be submitted to the Division on a Division-approved form provided for that purpose.

XII.F.4.a. The report shall list all condensate storage tanks subject or used to comply with Section XII.D.2. and the production volumes for each tank. Production volumes may be estimated by the amounts shown on the receipt from refinery purchasers for delivery of condensate from such tanks.

XII.F.4.b. The report shall list the emission factor used for each tank. The emission factors shall comply with Section XII.C.2.

XII.F.4.c. The report shall list the location and control efficiency value for each piece of air pollution control equipment, and shall identify the atmospheric condensate storage tanks being controlled by each.

XII.F.4.d. The April 30 report shall show the calendar monthly-uncontrolled actual emissions and the controlled actual emissions for each atmospheric condensate storage tank for January 1 through April 30, May 1 through September 30 and October 1 through December 31 of the previous year. The November 30 report shall show such calendar weekly information for the weeks including May 1st through September 30th only.

XII.F.4.e. The April 30 report shall show the calendar monthly total system-wide uncontrolled actual emissions and the total system-wide controlled actual emissions for January 1 through April 30, May 1 through September 30 and October 1 through December 31 of the previous year. The November 30 report shall show such calendar weekly information for the weeks including May 1st through September 30th only.

XII.F.4.f. The April 30 report shall show the calendar monthly total system-wide percentage reduction of emissions for May 1 through September 30 of the previous year, and for the combined periods of January 1 through April 30 and October 1 through December 31 of the previous year. The November 30 report shall show such calendar weekly information for the weeks including May 1 through September 30 period only.

XII.F.4.g. The report shall note any downtime of air pollution control equipment, and shall account for such downtime in the weekly control efficiency value and emission reduction totals. The notations shall include the date, time and duration of any scheduled downtime. For any unscheduled downtime, the date and time the downtime was discovered and the last date the air pollution control equipment was observed to be operating should be recorded in the report.

XII.F.4.h. The report shall state whether the required emission reductions were achieved on a weekly basis during the preceding ozone season (calendar weeks including May 1 through September 30) for the November 30 report, and whether the required emission reductions were achieved on a calendar monthly basis during the preceding year for the April 30 report. If the required emission reductions were not achieved, the report shall state why not, and shall identify steps being taken to ensure subsequent compliance.

XII.F.4.i. The report shall include any other information requested by the Division that is reasonably necessary to determine compliance with this Section XII.

XII.F.4.j. A copy of each semi-annual report shall be retained for five years.

XII.F.4.k. In addition to submitting the semi-annual reports, on or before the 30th of each month commencing in June 2007, the owner or operator of any condensate storage tank that is required to control volatile organic compound emissions pursuant to Sections XII.A. and XII.D. shall notify the Division of any instances where the air pollution control equipment was not properly functioning during the previous month. The report shall include the time and date that the equipment was not properly operating, the time and date that the equipment was last observed operating properly, and the date and time that the problem was corrected. The report shall also include the specific nature of the problem, the specific steps taken to correct the problem, the AIRS number of each of the condensate tanks being controlled by the equipment or if no AIRS number has been assigned the site name, and the estimated production from those tanks during the period of non-operation.

XII.F.4.l. Commencing in 2007, on or before April 30 of each year, the owner or operator shall submit a list identifying by name and AIRS number or if no AIRS number has been assigned the site name, each condensate storage tank that is being controlled to meet the requirements set forth in Section XII.D.2. On the 30th of each month during ozone season (May through September) and on November 30 and February 28, the owner or operator shall submit a list identifying any condensate storage tank whose control status has changed since submission of the previous list.

~~XII.F.4.m. (State Only) Semi-annual report submittals shall be signed by a responsible official who shall also sign the Division-approved compliance certification form for atmospheric condensate storage tanks. The compliance certification shall include both a certification of compliance with all applicable requirements of Section XII. If any non-compliance is identified, citation, dates and durations of deviations from this Section XII., associated reasoning, and compliance plan and schedule to achieve compliance. Compliance certifications for state only conditions shall be identified separately from compliance certifications required under the State Implementation Plan.~~

~~XII.F.4.n. (State Only) Each Division-approved self-certification form, and compliance certification submitted pursuant to Section XII. shall contain a certification by a responsible official of the truth, accuracy and completeness of such form, report or certification stating that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.~~

XII.F.5. The record-keeping and reporting required in Section XII. above shall not apply to the owner or operator of any natural gas compressor station or natural gas drip station that is authorized to operate pursuant to a construction permit or Title V operating permit issued by the Division if the following criteria are met:

XII.F.5.a. Such permits are obtained by the owner or operator on or after the effective date of this provision and contain the provisions necessary to ensure the emissions reductions required by Section XII.D;

XII.F.5.b. The owners and operators of such natural gas compressor stations or natural gas drip stations do not own or operate any exploration and production operation(s); and

XII.F.5.c. Total emissions from atmospheric condensate storage tanks associated with such natural gas compressor stations or drip stations subject to APEN reporting requirements under Regulation Number 3 owned or operated by the same person do not exceed 30 tons per year in the 8-hour Ozone Control Area.

XII.G. Gas-processing plants located in the 8-hour Ozone Control Area ~~(State Only: or any specific Ozone Nonattainment or Attainment/Maintenance Area)~~ shall comply with requirements of this Section XII.G., as well as the requirements of Sections XII.B., XII.C.1.a., XII.C.1.b., XII.H., and XVI.

XII.G.1. For fugitive VOC emissions from leaking equipment, the leak detection and repair (LDAR) program as provided at 40 CFR Part 60, Subpart KKK (July 1, 2016) shall apply, regardless of the date of construction of the affected facility, unless subject to applicable LDAR program as provided at 40 CFR Part 60, Subparts OOOO or OOOOa (July 1, 2016).

XII.G.2. Air pollution control equipment shall be installed and properly operated to reduce emissions of volatile organic compounds from any atmospheric condensate storage tank (or tank battery) used to store condensate that has not been stabilized that has uncontrolled actual emissions of greater than or equal to two tons per year. Such air pollution control equipment shall have a control efficiency of at least 95%.

XII.G.3. Existing natural gas processing plants within the 8-hour Ozone Control Area shall comply with the requirements of this Section XII.G. by May 1, 2005. ~~(State Only: Existing natural gas processing plants within any new Ozone Nonattainment or Attainment/Maintenance Area shall comply with this regulation within three years after the nonattainment designation.)~~

XII.G.4. The provisions of Sections XII.B., XII.C., XII.G., and XVI., shall apply upon the commencement of operations to any natural gas processing plant that commences operation in the 8-Hour Ozone Control Area or Ozone Nonattainment (State Only: or Attainment/Maintenance Area) after the effective date of this subsection.

XII.H. Emission Reductions from glycol natural gas dehydrators

XII.H.1. Beginning May 1, 2005, still vents and vents from any flash separator or flash tank on a glycol natural gas dehydrator located at an oil and gas exploration and production operation, natural gas compressor station, drip station or gas-processing plant in the 8-Hour Ozone Control Area and subject to control requirements pursuant to Section XII.H.3., shall reduce uncontrolled actual emissions of volatile organic compounds by at least 90 percent on a rolling twelve-month basis through the use of a condenser or air pollution control equipment.

~~XII.H.2. (State Only) Beginning January 30, 2009, still vents and vents from any flash separator or flash tank on a glycol natural gas dehydrator located at an oil and gas exploration and production operation, natural gas compressor station, drip station or gas-processing plant in any Ozone Nonattainment or Attainment/Maintenance Area and subject to control requirements pursuant to Section XII.H.3., shall reduce uncontrolled actual emissions of volatile organic compounds by at least 90 percent on a rolling twelve-month basis through the use of a condenser or air pollution control equipment.~~

XII.H.3. The control requirements of Sections XII.H.1. and XII.H.2. shall apply where:

XII.H.3.a. Actual uncontrolled emissions of volatile organic compounds from the glycol natural gas dehydrator are equal to or greater than one ton per year; and

XII.H.3.b. The sum of actual uncontrolled emissions of volatile organic compounds from any single glycol natural gas dehydrator or grouping of glycol natural gas dehydrators at a single stationary source is equal to or greater than 15 tons per year. To determine if a grouping of dehydrators meets or exceeds the 15 tons per year threshold, sum the total actual uncontrolled emissions of volatile organic compounds from all individual dehydrators at the stationary source, including those with emissions less than one ton per year.

XII.H.4. For purposes of Section XII.H., emissions from still vents and vents from any flash separator or flash tank on a glycol natural gas dehydrator shall be calculated using a method approved in advance by the Division.

XII.H.5. Monitoring and recordkeeping

XII.H.5.a. Beginning January 1, 2017, owners or operators of glycol natural gas dehydrators subject to the control requirements of Sections XII.H.1. or XII.H.2. must check on a weekly basis that any condenser or air pollution control equipment used to control emissions of volatile organic compounds is operating properly, and document:

XII.H.5.a.(i) The date of each inspection;

XII.H.5.a.(ii) A description of any problems observed during the inspection of the condenser or air pollution control equipment; and

XII.H.5.a.(iii) A description and date of any corrective actions taken to address problems observed during the inspection of the condenser or air pollution control equipment.

XII.H.5.b. The owner or operator must check and document on a weekly basis that the pilot light on a combustion device is lit, that the valves for piping of gas to the pilot light are open, and visually check for the presence or absence of smoke.

XII.H.5.c. The owner or operator must document the maintenance of the condenser or air pollution control equipment, consistent with manufacturer specifications or good engineering and maintenance practices.

XII.H.5.d. The owner or operator must retain records for a period of five years and make these records available to the Division upon request.

XII.H.6. Reporting

XII.H.6.a. On or before November 30, 2017, and semi-annually by April 30 and November 30 of each year thereafter, the owner or operator must submit the following information using Division approved format:

XII.H.6.a.(i) A list of the glycol natural gas dehydrator(s) subject to Section XII.H.;

XII.H.6.a.(ii) A list of the condenser or air pollution control equipment used to control emissions of volatile organic compounds from the glycol natural gas dehydrator(s); and

XII.H.6.a.(iii) The date(s) of inspection(s) where the condenser or air pollution control equipment was found not operating properly or where smoke was observed.

XII.I. The requirements of Section XII. shall not apply to the owner or operator of any natural gas compressor station or natural gas drip station located in an Ozone Nonattainment or Attainment/Maintenance Area if:

XII.I.1. Air pollution control equipment is installed and properly operated to reduce emissions of volatile organic compounds from all atmospheric condensate storage tanks (or tank batteries) that have uncontrolled actual emissions of greater than or equal to two tons per year;

XII.I.2. The air pollution control equipment is designed to achieve a VOC control efficiency of at least 95% on a rolling 12-month basis and meets the requirements of Sections XII.C.1.a. and XII.C.1.b;

XII.I.3. The owner or operator of such natural gas compressor station or natural gas drip station does not own or operate any exploration and production facilities in the Ozone Non-attainment or Attainment-maintenance Area; and

XII.I.4. The owner or operator of such natural gas compressor station or natural gas drip station does the following and maintains associated records and reports for a period of five years:

XII.I.4.a. Documents the maintenance of the air pollution control equipment according to manufacturer specifications;

XII.I.4.b. Conducts an annual opacity observation once each year on the air pollution control equipment to verify opacity does not exceed 20% during normal operations;

XII.I.4.c . Maintains records of the monthly stabilized condensate throughput and monthly actual VOC emissions; and

XII.I.4.d. Reports compliance with these requirements to the Division annually.

XII.I.5. A natural gas compressor station or natural gas drip station subject to this Section XII.G. at which a glycol natural gas dehydrator and/or natural gas-fired stationary or portable engine is operated shall be subject to Sections XII.H. and/or XVI.

## XIII. Graphic Arts and Printing

XIII.A. Packaging Rotogravure, Publication Rotogravure, and Flexographic Printing

XIII.A.1. Definitions

For the purpose of this section, the following definitions apply:

XIII.A.1.a. “Flexographic Printing” means the application of words, designs, and pictures to a substrate by means of a roll printing technique in which the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other elastometric materials.

XIII.A.1.b. "Packaging Rotogravure Printing" means rotogravure printing upon paper, paperboard, metal foil, plastic film, and other substrates, which are, in subsequent operations, formed into packaging products and labels for articles to be sold.

XIII.A.1.c. "Publication Rotogravure Printing" means rotogravure printing upon paper, which is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, and other types of printed materials.

XIII.A.1.d. "Roll Printing" means the application of words, designs, and pictures to a substrate usually by means of a series of hard rubber or steel rolls each with only partial coverage.

XIII.A.1.e. "Rotogravure Printing" means the application of words, designs, and pictures to a substrate by means of a roll printing technique, which involves an intaglio or recessed image areas in the form of cells.

XIII.A.2. Applicability

XIII.A.2.a. This section applies to all packaging rotogravure, publication rotogravure, and flexographic printing facilities whose potential emissions of volatile organic compounds before control (determined at design capacity and 8760 hrs/year, or at maximum production, and accounting for any capacity or production limitations in a federally-enforceable permit) are equal to or more than 90,000 Kg per year (100 tons/year). Potential emissions are to be estimated by extrapolating historical records of actual consumption of solvent and ink. (e.g., the historical use of 20 gallons of ink for 4,000 annual hours would be extrapolated to 43.8 gallons for 8760 hours.)The before-control volatile organic compound emissions calculations shall be the summation of all volatile organic compounds in the inks and solvents (including cleaning liquids) used.

XIII.A.3. Provisions for Specific Processes

XIII.A.3.a. No owner or operator of a facility subject to this section and employing VOC-containing ink shall operate, cause, allow, or permit the operation of the facility unless:

XIII.A.3.a.(i) The volatile fraction of ink, as it is applied to the substrate, contains 25.0 percent or less (by volume) of VOC and 75.0 percent or more (by volume) of water; or

XIII.A.3.a.(ii) The ink (minus water) as it is applied to the substrate, contains 60.0 percent or more (by volume) non-volatile material; or

XIII.A.3.a.(iii) The owner or operator installs and operates a control device and capture system in accordance with Sections XIII.A.3.b.. and XII.A.3.c.; or

XIII.A.3.a.(iv) A combination of solvent-borne inks and low solvent inks that achieve a 70% (volume) overall reduction of solvent usage (compared to an all solvent borne ink usage) is used; or

XIII.A.3.a. (v) Flexographic and packaging rotogravure printing facilities limit emissions to 0.5 pounds of VOC per pound of solids in the ink. The limit includes all solvent added to the ink: solvent in the purchased ink, solvent added to cut the ink to achieve desired press viscosity, and solvent added to ink on the press to maintain viscosity during the press run. (Publication rotogravure facilities shall not use this option); or

XIII.A.3.a. (vi) Crossline averaging is used. The requirements of Section IX.A.5.d apply.

XIII.A.3.b. A capture system shall be used in conjunction with the emission control system in Section XIII.A.3.a. The design and operation of a capture system shall be consistent with good engineering practice, and in conjunction with control equipment shall be required to provide for an overall reduction in volatile organic compound emissions of at least:

XIII.A.3.b.(i) 75.0 percent where a publication rotogravure process is employed;

XIII.A.3.b.(ii) 65.0 percent where a packaging rotogravure process is employed; or

XIII.A.3.b.(iii) 60.0 percent where a flexographic printing process is employed.

XIII.A.3.c. The design, operation, and efficiency of any capture system used in conjunction with any emission control system shall be certified in writing by the source owner or operator and approved by the Division. Testing of any capture system may be required by the Division on a case-by-case basis, in cases where a total enclosure is not used or when material balance results are questionable. Testing of capture system efficiency shall meet the requirements of Subsection IX.A.5.e.

XIII.A.3.d. The overall reduction in VOC emissions specified in Section XII.A.3.b. above shall be calculated by material balance methods approved by the Division, or by determination of capture and control device efficiencies. The overall VOC emission reduction rate equals the (percent capture efficiency X percent control device efficiency)/100.

XIII.A.4. Testing and Monitoring

The owner or operator of a source subject to the requirements of this section is also subject to the requirements of Section IX.A.3., IX.A.7, IX.A.9, and IX.A.10. In Section IX.A.3., EPA reference method 24A shall be the test method used for publication rotogravure inks, while EPA Reference method 24 data is acceptable for all other inks. Test methods as set forth in Appendix A, Part 60, Chapter I, Title 40, of the Code of Federal Regulations (CFR), in effect July 1, 1993.

XIII.A.5. The owner or operator of a source subject to the requirements of this section is also subject to the requirements of Section IX.A.8. “A Guideline for Graphic Arts Calculations” shall be used for compliance determination.

XIII.B. Lithographic and Letterpress Printing

XIII.B.1. General Provisions

XIII.B.1.a. Definitions

XIII.B.1.a.(i) "Alcohol" means any of the hydroxyl-containing organic compounds with a molecular weight equal to or less than 74.12, which includes methanol, ethanol, propanol, and butanol.

XIII.B.1.a.(ii) "Alcohol substitute" means nonalcohol additives that contain VOCs and are used in the fountain solution to reduce the surface tension of water or prevent ink piling.

XIII.B.1.a.(iii) "Cleaning material" means a VOC-containing material used to remove ink and debris from the printing press area, operating surfaces of the printing press and, printing press parts. Blanket wash is a type of cleaning material.

XIII.B.1.a.(iv) "Composite partial vapor pressure" means the sum of the partial pressures of the compounds defined as VOCs. Composite partial vapor pressure is calculated as follows:

Where:

| | | |
|---|---|---|
| Wi | = | Weight of the "i"th VOC compound, in grams |
| Ww | = | Weight of water, in grams |
| We | = | Weight of exempt compound, in grams |
| MWi | = | Molecular weight of the "i"th VOC compound, in g/g-mole |
| MWw | = | Molecular weight of water, in g/g-mole |
| MWc | = | Molecular weight of exempt compound, in g/g-mole |
| PPc | = | VOC composite partial vapor pressure at 20°C (68°F), in mm Hg |
| VPi | = | Vapor pressure of the "i"th VOC compound at 20°C(68°F), in mm Hg |

XIII.B.1.a.(v) "Fountain solution" means a mixture of water, nonvolatile printing chemicals, and a liquid additive that reduces the surface tension of the water so that it spreads easily across the printing plate surface. The fountain solution wets the non-image areas so that the ink is maintained within the image areas.

XIII.B.1.a.(vi) "Heatset" means any lithographic or letterpress printing operation where printing inks are set by the evaporation of the ink oils in a heatset dryer.

XIII.B.1.a.(vii) "Heatset dryer" means a hot air dryer used in heatset lithography to heat the printed substrate and to promote the evaporation of ink oils.

XIII.B.1.a.(viii) "Lithographic printing" means a planographic printing process where the image and non-image areas are chemically differentiated (the image area is oil receptive and the non-image area is water receptive). This printing process differs from other conventional printing methods, where the image is a raised or recessed surface.

XIII.B.1.a.(ix) "Letterpress printing" means a printing process in which the image area is raised relative to the non-image area and the paste ink is transferred to the substrate directly from the image surface.

XIII.B.1.a.(x) "Non-heatset" means any printing operation where the printing inks are set without the use of heat. For the purpose of Section XIII.B., ultraviolet-cured and electron beam-cured inks are considered non-heatset.

XIII.B.1.a.(xi) "Offset lithographic printing" means a printing process that transfers the ink film from the lithographic plate to an intermediary surface (blanket), which in turn transfers the ink film to the substrate.

XIII.B.1.a.(xii) "Press" means a printing production assembly composed of one or more print units used to produce a printed substrate including any associated coating, spray powder application, heatset web dryer, ultraviolet or electron beam curing units, or infrared heating units.

XIII.B.1.a.(xiii) "Sheet-fed printing" means a printing process where individual sheets of paper or substrate are fed into the printing press.

XIII.B.1.a.(xiv) "Web printing" means a printing process where continuous rolls of substrate material are fed to the press and rewound or cut to size after printing.

XIII.B.1.b. Applicability

XIII.B.1.b.(i) The provisions of this Section XIII.B. apply to fountain solutions, cleaning materials, inks (which include varnishes) and coatings used in lithographic and letterpress printing presses. These materials are not subject to the requirements of Sections IX. and X.

XIII.B.1.b.(ii) The work practice requirements in Section XIII.B.1.c. apply to all lithographic and letterpress printing operations.

XIII.B.1.b.(iii) The VOC content limit for inks in Section XIII.B.1.d. applies to lithographic and letterpress printing operations where total combined uncontrolled actual VOC emissions from each printing operation, including related cleaning materials and fountain solutions, are equal to or greater than three (3) tons per calendar year.

XIII.B.1.b.(iv) The cleaning material requirements in Section XIII.B.2. apply to letterpress printing operations where total combined uncontrolled actual VOC emissions from each printing operation, including related cleaning materials and fountain solutions, are equal to or greater than three (3) tons per calendar year.

XIII.B.1.b.(v) The cleaning material and fountain solution requirements in Sections XIII.B.2. and XIII.B.3. apply to offset lithographic printing operations where total combined uncontrolled actual VOC emissions from each printing operation, including related cleaning materials and fountain solutions, are equal to or greater than three (3) tons per calendar year.

XIII.B.1.b.(vi) The control requirements in Section XIII.B.4. apply to each heatset web offset lithographic and heatset web letterpress printing press with the potential to emit from the dryer, prior to controls, at least 25 tons per calendar year of VOC (petroleum ink oil) from heatset inks.

XIII.B.1.c. Work Practice Requirements

Lithographic and letterpress printing operations must implement the following work practices at all times to reduce VOC emissions from fugitive sources:

XIII.B.1.c.(i) Cover open containers and keep cleaning materials in closed containers when not in use;

XIII.B.1.c.(ii) Properly dispose of used cleaning materials, fountain solutions, and used shop towels; and

XIII.B.1.c.(iii) Implement good air pollution control practices that minimize emissions, including, but not limited to, using only volumes necessary for cleaning and maintain cleaning equipment to repair cleaning materials leaks.

XIII.B.1.d. VOC Content Limit for Inks

XIII.B.1.d.(i) Lithographic and letterpress printing operations, excluding heatset web offset and heatset web letterpress printing operations, must use low-VOC inks, which average less than 30% (by weight) VOC on a monthly basis.

XIII.B.1.d.(ii) Heatset web offset lithographic and heatset web letterpress printing operations must use low-VOC inks, which average less than 40% (by weight) VOC on a monthly basis.

XIII.B.2. Offset lithographic printing and letterpress printing operations must comply with the following cleaning materials requirements;

XIII.B.2.a. All cleaning materials must contain less than 70% (by weight) VOC or have a VOC composite vapor pressure less than 10 mmHg at 20°C.

XIII.B.2.b. Exemptions

The following materials and operations are exempt from the cleaning material requirements in Section XIII.B.2.a.:

XIII.B.2.b.(i) Cleaners used on electronic components of a press.

XIII.B.2.b.(ii) Pre-press cleaning operations.

XIII.B.2.b.(iii) Post-press cleaning operations.

XIII.B.2.b.(iv) Floor cleaning supplies (other than those used to clean dried ink).

XIII.B.2.b.(v) Cleaning performed in parts washers or cold cleaners that are subject to Section V.

XIII.B.2.c. Use of non-compliant cleaning materials

Cleaning materials not meeting the limits in Section XIII.B.2.a. are limited to less than or equal to 110 gallons per calendar year.

XIII.B.3. Offset lithographic printing operations must comply with the following fountain solution requirements:

XIII.B.3.a. Heatset web offset lithographic printing operations must:

XIII.B.3.a.(i) Use a fountain solution containing 1.6% alcohol (by weight) or less as applied;

XIII.B.3.a.(ii) Use a fountain solution containing 3% alcohol (by weight) or less as applied if the fountain solution is refrigerated to below 60°F (15.5°C); or

XIII.B.3.a.(iii) Use a fountain solution containing 5% alcohol substitute (by weight) or less as applied and no alcohol.

XIII.B.3.b. Sheet-fed printing operations must

XIII.B.3.b.(i) Use a fountain solution containing 5% alcohol (by weight) or less as applied;

XIII.B.3.b.(ii) Use a fountain solution containing 8.5% alcohol (by weight) or less as applied if the fountain solution is refrigerated to below 60°F (15.5°C); or

XIII.B.3.b.(iii) Use a fountain solution containing 5% alcohol substitute (by weight) or less as applied and no alcohol.

XIII.B.3.b.(iv) The following are exempt from the fountain solution requirements in Section XIII.B.3.b.:

XIII.B.3.b.(iv)(A) Fountain solution use associated with a sheet-fed printing press with maximum sheet size 11x17 inches or smaller.

XIII.B.3.b.(iv)(B) Fountain solution use associated with a sheet-fed printing press having a total fountain solution reservoir less than one (1) gallon.

XIII.B.3.c. Non-heatset web printing must use a fountain solution containing 5% alcohol substitute (by weight) or less and no alcohol.

XIII.B.4. Heatset web offset lithographic and heatset web letterpress printing operations must comply with the following control requirements:

XIII.B.4.a. Heatset web offset lithographic and heatset web letterpress printing operations must reduce VOC emissions from heatset dryers with an emission control system having a control efficiency of 90% or greater.

XIII.B.4.b. If the control device was first installed on or after January 1, 2017, heatset web offset lithographic and heatset web letterpress printing operations must reduce VOC emissions from heatset dryers with an emission control system having a control efficiency of 95% or greater.

XIII.B.4.c. Where inlet VOC concentration is low and a 90 or 95% control efficiency is not achievable due to low inlet concentrations or measurable due to equipment configuration, heatset web offset lithographic and heatset web letterpress printing operations may reduce the control device outlet concentration to 20 ppmv (as hexane on a dry basis).

XIII.B.4.d. The following are exempt from the control requirements in Section XIII.B.4.:

XIII.B.4.d.(i) Heatset presses used for book printing.

XIII.B.4.d.(ii) Heatset presses with maximum web width of 22 inches or less.

XIII.B.4.d.(iii) Waterborne or radiation (ultra-violet or electron beam) cured materials that are not heatset.

XIII.B.5. Monitoring, Recordkeeping and Reporting

XIII.E.5.a. The owner or operator of a heatset web offset lithographic or heatset web letterpress printing operation required to demonstrate compliance with Section XIII.B.4. must install, calibrate, maintain, and operate a temperature monitoring device, according to the manufacturer's specifications.

XIII.E.5.b. The owner or operator of a lithographic and letterpress printing operations subject to Sections XIII.B.1.d. and XIII.B.2.-.4. must keep the following records for two (2) years and make them available for inspection by the Division upon request:

XIII.B.5.b.(i) If applicable, records demonstrating that a listed exemption to this Section XIII.B. applies.

XIII.B.5.b.(ii) If applicable, monthly records of the type, alcohol content or alcohol substitute content, and total volume of fountain solution used in printing operations.

XIII.B.5.b.(iii) If applicable, monthly records of the type, VOC content or composite vapor pressure, and total volume of the cleaning materials used in printing operations.

XIII.B.5.b.(iv) If applicable, monthly records of the type, VOC content, and total volume of inks (including varnishes) and coatings used in printing operations.

XIII.B.5.b.(v) If applicable, monthly records demonstrating compliance with the control requirements in Section XIII.B.4.

XIII.B.5.b.(vi) Records of calendar year VOC emission estimates demonstrating whether the printing operation meets or exceed the applicability thresholds in Section XIII.B.1.b.

XIII.E.5.c. Compliance with control requirements must be demonstrated using the following methods as applicable:

XIII.B.5.c.(i) Safety data sheets or other analytical data from the ink, cleaning material, or fountain solution manufacturer to demonstrate compliance with VOC content limit for inks in Section XIII.B.1.d., the cleaning material requirements in Section XIII.B.2., and the fountain solution requirements in Section XIII.B.3.;

XIII.B.5.c.(ii) A manufacturer guarantee of the control equipment's emission control efficiency and operation and maintenance of control equipment according to manufacturer's specifications to demonstrate compliance with the control equipment requirements in Section XIII.B.4.; or

XIII.B.5.c.(iii) A performance test conducted during representative conditions using one of the following methods as applicable:

XIII.B.5.c.(iii)(A) EPA Method 24 (40 CFR Part 60, Appendix A) to determine VOC content for inks, fountain solutions and cleaning materials; or

XIII.B.5.c.(iii)(B) EPA Method 18, 25, or 25A (40 CFR Part 60, Appendix A) to determine control efficiency or outlet concentration of the emission control equipment.

## XIV. Pharmaceutical Synthesis

XIV.A. General Provisions

XIV.A.1. Applicability

This section applies to all sources of volatile organic compounds associated with pharmaceutical manufacturing activities, including, but not limited to, reactors, distillation units, dryers, storage of VOCs, extraction equipment, filters, crystallizers, and centrifuges.

XIV.A.2. Exemptions

Extraction of organic substances from animal or vegetable material; fermentation and culturing; formulation and packaging of pharmaceutical or medicinal products.

XIV.A.3. Definitions

For the purpose of this section, the following definitions apply:

XIV.A.3.a. "Control System" means any number of control devices, including condensers, which are designed and operated to reduce the quantity of VOC emitted to the atmosphere.

XIV.A.3.b. "Pharmaceutical" means a medicine or drug which appears in the United States Pharmacopoeia National Formulary, or which is so designated by the National Drug Code of the United States FDA Bureau of Drugs.

XIV.A.3.c. "Production Equipment Exhaust System" means a device for collecting and directing out of the work area VOC fugitive emissions from reactor openings, centrifuge openings, and other vessel openings for the purpose of protecting workers from excessive VOC exposure.

XIV.A.3.d. "Reactor" means a vat or vessel, which may be jacketed to permit temperature control, designed to contain chemical reactions.

XIV.A.3.e. "Separation Operation" means a process that separates a mixture of compounds and solvents into two or more components. Specific mechanisms include, but are not limited to, extraction, centrifugation, filtration, distillation, and crystallization.

XIV.A.3.f. "Synthesized Pharmaceutical Manufacturing" means manufacture of pharmaceutical products by chemical synthesis. It includes the manufacture of chemical intermediates (of sufficient purity) which are typically used by the pharmaceutical industry as precursors to finished mixtures of chemicals. (Thus, it excludes those chemical processes which are not directed at creating finished pharmaceutical or chemical intermediates to finished pharmaceuticals.)

XIV.B. Provisions for Specific Processes

XIV.B.1. The owner or operator of a facility subject to this section shall control the volatile organic compound emissions from each vent which has the potential to emit 6.80 kg/day (l5 lb./day) or more of VOC from reactors, distillation operations, crystallizers, centrifuge and vacuum dryers. Surface condensers or equivalent controls shall be used, provided that, if surface condensers are used, the condenser outlet gas temperature shall not exceed the following values:

| VOCs True Vapor Pressure* at 20$^{o}$ in torr (and psia) from (minimum) up to ** (maximum) | Maximum temperature of Gas Stream immediately exiting the condenser |
|---|---|
| 0-26(0-0.5) | 35$^{o}$C (95$^{o}$F) |
| 26-52(0.5-1.0) | 25$^{o}$C(77$^{o}$F) |
| 52-78(1.0-1.5) | 10$^{o}$C(50$^{o}$F) |
| 78-150(1.5-2.9) | 0$^{o}$C(32$^{o}$F) |
| 150-300(2.9-5.8) | -15$^{o}$C(5$^{o}$F) |
| Greater than 300(Greater than 5.8) | -25$^{o}$C(-13$^{o}$F) |

*The calculation methods for gases containing more than one condensable component are complex. As a simplification, the temperature necessary for control by condensation can be roughly approximated by the weighted average of the temperatures necessary for condensation of each VOC considered separately but at concentrations equal to the total organic concentration.

**But not including the maximum value of the range.

XIV.B.2. Division approval shall be required for control equipment used to control VOCs of 570 torr (11 psia) and above.

XIV.B.3. The owner or operator of a facility subject to this section shall reduce the VOC emissions from each air dryer and production equipment exhaust system:

XIV.B.3.a. By at least 90 percent if emissions are 150 kg/day (330 lbs/day) or more of VOC, or,

XIV.B.3.b. To 15.0 kg/day (33 lb/day) or less if emissions are less than 150 kg/day (330 lb/day) of VOC.

XIV.B.4. The owner or operator of a facility subject to this section shall:

XIV.B.4.a. Provide a vapor balance system or equivalent control that is at least 90.0 percent effective in reducing emissions from truck or railcar deliveries to storage tanks with capacities greater than 7,570 liters (2,000 gallons) that store VOC with true vapor pressure greater than 210 torr (4.1 psia) at 20°C; and,

XIV.B.4.b. Install pressure/vacuum conservation vents set at plus or minus 0.2 kPa on all storage tanks that store VOC with true vapor pressures greater than 10.0 kPa (1.5 psi) at 20°C.

XIV.B.5. The owner or operator of a facility subject to this section shall enclose all centrifuges, rotary vacuum filters, and other filters having an exposed liquid surface, where the liquid contains VOC and exerts a total VOC true vapor pressure of 26 torr (0.5 psia) or more at 20°C.

XIV.B.6. The owner or operator of a synthesized pharmaceutical facility subject to this section shall install covers on all in-process tanks containing a volatile organic compound at any time. These covers shall remain closed unless sampling, maintenance, short-duration production procedures or inspection procedures require access.

XIV.B.7. The owner or operator of a facility subject to this section shall repair all leaks from which a liquid, containing VOC, can be observed running or dripping. The repair shall be completed the first time the equipment is off-line for a period of time long enough to complete the repair, except that no leak shall go unrepaired for more than 14 days after initial detection unless the Division issues written approval.

XIV.B.8. Each surface condenser shall have at least one temperature indicator with its sensor located in the outlet gas stream.

XIV.C. Testing and Monitoring

XIV.C.1. Sources subject to the requirements of this section are also subject to the requirements of Section 7.IX.A.3, IX.A.7., IX.A.8., and IX.A.9.

## XV. Control of Volatile Organic Compound Leaks from Vapor Collection Systems and Vapor Control Systems Located at Gasoline Terminals, Gasoline Bulk Plants, and Gasoline Dispensing Facilities

XV.A. General Provisions

XV.A.1. Applicability

This section is applicable to all gasoline terminals, gasoline bulk plants and gasoline dispensing facilities (e.g., service stations) which are located in ozone nonattainment areas and which must have a vapor collection and/or a vapor control system pursuant to Section VI. and other applicable rules.

XV.A.2. Exemptions

This section is not applicable to those operations involving transfer of gasoline from gasoline dispensing facilities to motor vehicle fuel tanks nor to other dispensing operations at such facilities.

XV.A.3. Definitions

For the purpose of this section, the following definitions apply:

XV.A.3.a. "Gasoline Dispensing Facility" means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks, (e.g., service stations, fleet pumps, etc.)

XV.A.3.b. "Gasoline Transport Truck" means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities (e.g., service stations), bulk gasoline plants or gasoline terminals.

XV.A.3.c. "Vapor Collection System" means a vapor transport system which uses direct displacement by the gasoline being transferred to force vapors from the vessel being loaded into either a vessel being unloaded or a vapor control system or vapor holding tank.

XV.A.3.d. "Vapor Control System" means a system that is designed to control the release of volatile organic compounds displaced from a vessel during transfer of gasoline.

XV.B. Specific Provisions

XV.B.1. The operator of a vapor collection or vapor control system at a facility subject to the provisions of this section shall operate the vapor collection system and the gasoline loading equipment in a manner that prevents:

XV.B.1.a. Gauge pressure from exceeding 33.6 torr (18 inches of H2O) and vacuum from exceeding gauge pressure of minus 11.2 torr (minus 6 inches of H2O) at the point where the vapor return line on the truck connects with the vapor collection line of the facility.

XV.B.1.b. A reading equal to or greater than 100 percent of the lower explosive limit (LEL, measured as propane) at 2.5 centimeters from a known or potential leak source when measured by the procedures described in Appendix B of "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems," EPA-450/2-78-051, during loading or unloading operations at gasoline dispensing facilities, bulk plants and terminals.

XV.B.1.c. Avoidable liquid leaks from the system during loading or unloading operations at gasoline dispensing facilities, bulk plants, and terminals.

XV.B.1.d. Division representatives shall monitor for excessive back pressure and vapor leakage as is defined by 1.a. and 1.b. above.

XV.B.2. Repairs and Modifications

XV.B.2.a. The operator shall within fifteen (15) days, repair and retest a vapor collection or control system that exceeds the pressure limits (Subparagraph 1.a. of this Subsection B.), excepting that;

XV.B.2.b. Should an applicable facility require modification or repairs that will take longer than fifteen (15) days to complete, the operator shall submit to the Division for approval a schedule which includes dates of commencement and completion.

## XVI. Control of Emissions from Stationary and Portable Engines and Other Combustion Equipment in the 8-Hour Ozone Control Area

XVI.A Requirements for new and existing engines.

XVI.A.1. The owner or operator of any natural gas-fired stationary or portable reciprocating internal combustion engine with a manufacturer's design rate greater than 500 horsepower commencing operations in the 8-hour Ozone Control Area on or after June 1, 2004 shall employ air pollution control technology to control emissions, as provided in Section XVI.B.

XVI.A.2. Any existing natural gas-fired stationary or portable reciprocating internal combustion engine with a manufacturer's design rate greater than 500 horsepower, which existing engine was operating in the 8-hour Ozone Control Area prior to June 1, 2004, shall employ air pollution control technology on and after May 1, 2005, as provided in Section XVI.B.

XVI.B. Air pollution control technology requirements

XVI.B.1. For rich burn reciprocating internal combustion engines, a non-selective catalyst reduction and an air fuel controller shall be required. A rich burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of less than 2% by volume.

XVI.B.2. For lean burn reciprocating internal combustion engines, an oxidation catalyst shall be required. A lean burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of 2% by volume, or greater.

XVI.B.3. The emission control equipment required by this Section XVI.B shall be appropriately sized for the engine and shall be operated and maintained according to manufacturer specifications.

XVI.C. The air pollution control technology requirements in Sections XVI.A. and XVI.B. shall not apply to:

XVI.C.1. Non-road engines, as defined in Regulation Number 3.

XVI.C.2. Reciprocating internal combustion engines that the Division has determined will be permanently removed from service or replaced by electric units on or before May 1, 2007. The owner or operator of such an engine shall provide notice to the Division of such intent by May 1, 2005 and shall not operate the engine identified for removal or replacement in the 8-hour Ozone Control Area after May 1, 2007.

XVI.C.3. Any emergency power generator exempt from APEN requirements pursuant to Regulation Number 3.

XVI.C.4. Any lean burn reciprocating internal combustion engine operating in the 8-hour Ozone Control Area prior to June 1, 2004, for which the owner or operator demonstrates to the Division that retrofit technology cannot be installed at a cost of less than $ 5,000 per ton of VOC emission reduction. Installation costs and the best information available for determining control efficiency shall be considered in determining such costs. In order to qualify for such exemption, the owner or operator must submit an application making such a demonstration, together with all supporting documents, to the Division by May 1, 2005. Any reciprocating internal combustion engine qualifying for this exemption shall not be moved to any other location within the 8-hour Ozone Control Area.

XVI.D.3.a.(iv) A description of any corrective action taken.

XVI.D.3.a.(v) If the owner or operator conducts the combustion process adjustment according to the manufacturer recommended procedures and schedule and the manufacturer specifies a combustion process adjustment on an operation time schedule, the hours of operation.

XVI.D.3.a.(vi) If multiple fuels are used, the type of fuel burned and heat input provided by each fuel.

XVI.D.3.b. The owner or operator must retain manufacturer recommended procedures, specifications, and maintenance schedule if utilized under Section XVI.D.4.a. for the life of the equipment, and make available to the Division upon request.

XVI.D.3.c. The owner or operator must retain annual reports for at least 5 years, and make available to the Division upon request.

XVI.D.4. As an alternative to the requirements described in Sections XVI.D.2.a.-e. and XVI.D.3.a.:

XVI.D.4.a. The owner or operator may conduct the combustion process adjustment according to the manufacturer recommended procedures and schedule; or

XVI.D.4.b. The owner or operator of combustion equipment that is subject to and required to conduct a period tune-up or combustion adjustment by the applicable requirements of a New Source Performance Standard in 40 CFR Part 60 or National Emission Standard for Hazardous Air Pollutants in 40 CFR Part 63 may conduct tune-ups or adjustments according to the schedule and procedures of the applicable requirements of 40 CFR Part 60 or 40 CFR Part 63.

XVI.D.4.c. The owner or operator may comply with applicable recordkeeping requirements related to combustion process adjustments conducted according to a New Source Performance Standard in 40 CFR Part 60 or National Emission Standard for Hazardous Air Pollutants in 40 CFR Part 63.

## XVII. (State Only, except Section XVII.E.3.a. which was submitted as part of the Regional Haze SIP) Statewide Controls for Oil and Gas Operations and Natural Gas-Fired Reciprocating Internal Combustion Engines

XVII.A. (State Only) Definitions

XVII.A.1 "Air Pollution Control Equipment," as used in this Section XVII, means a combustion device or vapor recovery unit. Air pollution control equipment also means alternative emissions control equipment and pollution prevention devices and processes intended to reduce uncontrolled actual emissions that comply with the requirements of Section XVII.B.2.e.

XVII.A.2. "Approved Instrument Monitoring Method," means an infra-red camera, EPA Method 21, or other Division approved instrument based monitoring device or method. Any instrument monitoring method approved by the Division must be capable of detecting leaks as defined in Section XVII.F.6. If an owner or operator elects to use Division approved continuous emission monitoring, the Division may approve a streamlined inspection and reporting program for such operations.

~~XVII.E.2.b. Actual emissions from natural gas fired reciprocating internal combustion engines shall not exceed the emission performance standards in Table 2 below as expressed in units of grams per horsepower-hour (G/hp-hr)~~

| ~~TABLE 2~~ | | | | |
|---|---|---|---|---|
| ~~Maximum Engine Hp~~ | ~~Construction or Relocation Date~~ | ~~Emission Standards is G/hp-hr~~ | | |
| | | ~~NOx~~ | ~~CO~~ | ~~VOC~~ |
| ~~< 100 Hp~~ | ~~Any~~ | ~~NA~~ | ~~NA~~ | ~~NA~~ |
| ~~≥100 Hp and < 500 Hp~~ | ~~On or after January 1, 2008~~<br>~~On or after January 1, 2011~~ | ~~2.0~~<br>~~1.0~~ | ~~4.0~~<br>~~2.0~~ | ~~1.0~~<br>~~0.7~~ |
| ~~≥500 Hp~~ | ~~On or after July 1, 2007~~<br>~~On or after July 1, 2010~~ | ~~2.0~~<br>~~1.0~~ | ~~4.0~~<br>~~2.0~~ | ~~1.0~~<br>~~0.7~~ |

~~XVII.E.3. Existing Natural Gas Fired Reciprocating Internal Combustion Engines~~

XVII.E.3.a. (Regional Haze SIP) Rich Burn Reciprocating Internal Combustion Engines

XVII.E.3.a.(i) Except as provided in Sections XVII.3.1.(i)(b) and (c) and XVII.E.3.a.(ii), all rich burn reciprocating internal combustion engines with a manufacturer's name plate design rate greater than 500 horsepower, constructed or modified before February 1, 2009 shall install and operate both a non-selective catalytic reduction system and an air fuel controller by July 1, 2010. A rich burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of less than 2% by volume.

XVII.E.3.a.(i)(a) All control equipment required by this Section XVII.E.3.a. shall be operated and maintained pursuant to manufacturer specifications or equivalent to the extent practicable, and consistent with technological limitations and good engineering and maintenance practices. The owner or operator shall keep manufacturer specifications or equivalent on file.

XVII.E.3.a.(i)(b) Internal combustion engines that are subject to an emissions control requirement in a federal maximum achievable control technology ("MACT") standard under 40 CFR Part 63, a Best Available Control Technology ("BACT") limit, or a New Source Performance Standard under 40 CFR Part 60 are not subject to this Section XVII.E.3.a.

XVII.E.3.a.(i)(c) The requirements of this Section XVII.E.3.a. shall not apply to any engine having actual uncontrolled emissions below permitting thresholds listed in Regulation Number 3, Part B.

XVII.E.3.a.(ii) Any rich burn reciprocating internal combustion engine constructed or modified before February 1, 2009, for which the owner or operator demonstrates to the Division that retrofit technology cannot be installed at a cost of less than $ 5,000 per ton of combined volatile organic compound and nitrogen oxides emission reductions (this value shall be adjusted for future applications according to the current day consumer price index) is exempt complying with Section XVII.E.3.a. Installation costs and the best information available for determining control efficiency shall be considered in determining such costs. In order to qualify for such exemption, the owner or operator must submit an application making such a demonstration, together with all supporting documents, to the Division by August 1,2009.

# Appendix A

## Criteria for Control of Vapors from Gasoline Transfer to Storage Tanks

I. Drop Tube Specifications. Submerged fill is specifically required. The drop tube must extend to within 15.24 cm (6 in.) of the tank bottom.

II. Vapor Hose Return. Vapor return line and any manifold must be minimum 7.6 cm (3 in.) ID. All tanks must be provided with individual overfill protection. (Liquid must not be allowed in the vent line or vapor recovery line.) Disconnect on liquid line should assure that all liquid in the hose is drained into the storage tank. The requirements for overfill protection as specified may be waived for existing storage tanks when it is demonstrated to the satisfaction of the appropriate local Fire Marshal, and where applicable, the State Oil Inspection Office that the installation of overfill protection devices on existing tanks is physically not possible.

III. Size of Vapor Line Connections. For separate vapor lines, nominal three inch (7.6 cm) or larger connections must be utilized at the storage tank and truck. However, short lengths of 2-inch (5.1 cm) vertical pipe no greater than 91.4 cm (3 ft.) long are permissible if the fuel delivery rate is less than 400 gallons per minute.

Where concentric (coaxial) connections are utilized, a 45 $cm^2$ (7 sq. in.) area for vapor return shall be provided. Four-inch concentric designs are acceptable only when using a venturi-shaped outer tube or where normal drop rate of 1,700 liters per minute (450 gpm) is reduced by at least 25%. Six-inch (15.24 cm) risers should be installed in new stations with concentric connections.

IV. Type of Liquid Fill Connection. Vapor tight caps are required for the liquid fill connection for all systems. A positive closure utilizing a gasket is necessary to prevent vapors from being emitted at ground level. Cam-lock closures meet this requirement. Dry break closures are preferred.

V. Tank Truck Inspection. Tank trucks are specifically required to be vapor-tight and to have valid leak-tight certification. The visual inspection procedure must be conducted at least once every six months to ensure properly operating manifolding and relief valves, using the test procedure of Appendix D.B.

VI. Dry Break on Underground Tank Vapor Riser. Dry-break closures are required to assure transfer of displaced vapors to the truck and to prevent ground-level, gasoline-vapor emissions caused by failure to connect the vapor return line to the underground tanks (closure on riser to mate with opening on hose). These devices keep the tank sealed until the hose is connected to the underground tank. Concentric couplers without dry-breaks are required to have a dry-break on the vapor line connection to the coupler itself, rather than on the rise pipe from the storage tank. The liquid fill riser should be provided with a gap having a positive closure (threaded or latched).

VII. Equipment Ensuring Vapor-Hose Connection During Gasoline Deliveries. An equipment system aboard the tank truck shall insure (barring deliberate tampering) that a vapor return hose is connected from the truck's vapor return line to the tank receiving gasoline.

VIII. Vent Line Restriction Devices. Vent line restriction devices are required. They both improve recovery efficiency and, as an integral part of any system, assure that the vapor return line is connected during transfer. If the liquid fill line were attached to the underground tank and the vapor return line were disconnected, then dry break closures would seal the vapor return path to the truck, forcing all vapors out the vent line. In such instances, a restriction device on this vent line greatly reduces fill rate, warning the operator that the vapor line is not connected. Both of the following devices must be used.

(a) An orifice of one-half to three-fourth inch (1.25 - 1.9 cm) ID.

(b) A pressure/vacuum relief valve set to open at (1) a positive gauge-pressure greater or equal to five inches of water (9 torr) and at (2) a negative gauge-pressure greater or equal to five inches of water (9 torr).

IX. Fire and Safety Regulations. All new or modified installations must comply in their entirety with all code requirements including NFPA, Pamphlet 30 (fiberglass is preferred for new manifold lines). For any questions concerning compliance, please contact State Oil Inspection or your local Fire Marshal.

X. State Oil Inspection. Requirements of the State Oil Inspection office make accurate measurements of the liquid in the underground tank necessary. Vapor-tight gauging devices will be required in all systems designed such that a pressure other than atmospheric will be held or maintained in the storage tank. The volume of liquid in the tanks maintained at atmospheric pressure may be determined with a stick through the submerged drop tube or through a separate submerged gauging tube extending to within 15.24 cm (6 in.) of the tank bottom.

Appendix B

Criteria for Control of Vapors From Gasoline Transfer at Bulk Plants
(Vapor Balance System)

I. Storage Tank Requirements:

A. Drop Tube Specification: Underground tanks must contain a drop tube that extends to within six inches (15.24 cm) of the tank bottom. All top loaded above-ground tanks must contain a similar drop tube. Above-ground tanks using bottom loading, where the inlet is flush with the tank bottom, must meet the submerged fill requirement.

B. Size of Vapor Lines from Storage Tanks to Loading Rack: See nomograph (Attachment 1). NOTE: Affected sources are free to choose a pipe diameter different from the one suggested by the nomograph if sufficient justification and documentation is presented.

C. Pressure Relief Valves: All pressure relief valves and valve connections must be checked periodically for leaks, and be repaired as required. The relief valve pressures should be set in accordance with Sections 2-2.5.1 and 2-2.7.1 inclusive of the current National Fire Protection Agency Pamphlet No. 30.

D. Liquid Level Check Port: Access for checking liquid level by other than a vapor-tight gauging system shall be vapor-tight when not being used. Tank level shall be checked prior to filling to avoid overfills.

E. Miscellaneous Tank Openings: All other tank openings, e.g., tank inspection hatches, must be vapor tight when not being used, and must be closed at all times during transfer of fuel.

F. Storage Tank Overfill Protection: Except for concentric (coaxial) delivery systems, underground tanks must have ball check valves (stainless steel ball). Tanks with concentric delivery systems must have Division-approved overfill protection, (e.g., cutoff pressure-switch in vent line).

II. Loading Rack Requirements:

A. Loading Specification: A vapor-tight bottom-loading or top-loading system using submerged fill with a positive seal, e.g., the Wiggins (tm) system, is required. NOTE: Bulk plants

delivering solely to exempt accounts are required to have submerged fill, but loading need not be vapor-tight.

B. Dry-Break on Storage Tank Vapor Return Line: A dry-break is required to prevent ground-level gasoline vapor emissions during periods when gasoline transfer is not being made. This device keeps the tank sealed until the vapor return hose is connected.

III. Tank Truck* Requirements:

A. Vapor Return Modification: Tank trucks must be modified to recover vapors during loading and unloading operations. NOTE: Tank trucks making deliveries solely to exempt accounts do not require this modification. However, 97% submerged fill is required when top loading.

B. Loading Specifications: Bottom loading or top loading using submerged fill with a positive seal is required for tank trucks modified for vapor recovery. NOTE: When loading a tank truck with this modification without the vapor return hose connected (this is allowed at bulk plants servicing exempt accounts returning without collected vapors in the tank), the requirements of National Fire Protection Agency Pamphlet No. 385, "Loading and Unloading Venting Protection in Tank Vehicles, Section 2219, Paragraph c", must be met.

C. Vapor Return Hose Size: A minimum three-inch (7.6 cm) ID vapor return hose is required.

D. Tank Truck Inspection: Tank trucks are required to be vapor-tight and have valid leak-tight certification. Periodic visual inspection is necessary to insure properly operating manifolding and relief valves.

* The term "tank truck" is meant to include all trucks with tanks used for the transport of gasoline, such as tank wagons, account trucks and transport trucks.

Appendix C

Minimum Cooling Capacities for Refrigerated Freeboard Chillers on Vapor Degreasers

The specifications in this Appendix apply only to vapor degreasers that have both condenser coils and refrigerated freeboard chillers. (The coolant in the condenser coils is normally water.) The amount of refrigeration capacity is expressed in Calories/Hour per meter of perimeter. This perimeter is measured at the air/vapor interface.

For refrigerated chillers operated below 0°C., the following requirements apply:

| DEGREASER WIDTH | *CALORIES/ HR METER OF PERIMETER | BTU/HR FOOT OF PERIMETER |
|---|---|---|
| Less than 1.1 meters (3.5 ft.) | 165 | 200 |
| 1.1 - 1.8 meters (3.5 - 6.0 ft.) | 250 | 300 |
| 1.8 - 2.4 meters (6.0 - 8.0 ft.) | 335 | 400 |
| 2.4 - 3.0 meters (8.0 - 10.0 ft.) | 415 | 500 |
| Greater than 3.0 meters (10 ft.) | 500 | 600 |

* Kilocalories (1 Kilocalorie = 4184.0 joules)

For refrigerated chillers operating above 0°C., there shall be at least 415 Calories/Hr. - meter of perimeter (500 BTU/Hr-ft.), regardless of size.

Definition:

"Air/Vapor Interface" - means the surface defined by the top of the solvent vapor layer within the confines of a vapor degreaser.

# Appendix D

## Test Procedures for Annual Pressure/Vacuum Testing of Gasoline Transport Tanks

### A. Testing

The delivery tank, mounted on either the truck or trailer, is pressurized isolated from the pressure source, and the pressure drop recorded to determine the rate of pressure change. A vacuum test is to be conducted in a similar manner. The Division shall provide forms which designate all required information to be recorded by the testing agency.

### B. Visual Inspection

The entire tank, including domes, dome vents, cargo tank, piping, hose connections, hoses and delivery elbows, shall be inspected for wear, damage, or misadjustment that could be a potential leak source. Inspect all rubber fittings except those in piping which are not accessible. Any part found to be defective shall be adjusted, repaired, or replaced as necessary. (Safety note: it is strongly recommended that testing be done outside, unless tank is first degassed (e.g., steamcleaned). No "hot work" or spark-producing procedures should be undertaken without first degassing).

### C. Equipment Requirements

1. Necessary equipment.

a. Source of air or inert gas of sufficient quantity to pressurize tanks to 27.7 inches of water (1.0 psi; 52 torr) above atmospheric pressure.

b. Water manometer with 0 to 25 inch range (0-50 torr); with scale readings of 0.1 inch (or 0.2 torr).

c. Test cap for vapor line with a shut-off valve for connection to the pressure and vacuum supply hoses. The test cap is to be equipped with a separate tap for connecting with manometer.

d. Cap for the gasoline delivery hose.

e. Vacuum device (aspirator, pump, etc.) of sufficient capacity to evacuate tank to ten (10) inches of water (20 torr).

2. Recommended equipment

a. In-line, pressure-vacuum relief valve set to activate at one (1) psi (52 torr) with a capacity equal to the pressurizing or evacuating pumps. (Note: This is a safety measure to preclude the possibility of rupturing the tank).

b. Low pressure (5 psi (250 torr) divisions) regulator for controlling pressurization of tank.

D. Vacuum and Pressure Tests of Tanks

1. Pressure Test

a. The dome covers are to be opened and closed.

b. The tank shall be purged of gasoline vapor and tested empty. The tank may be purged by any safe method such as flushing with diesel fuel, or heating oil. (For major repairs it is recommended that the tank be degassed by steam cleaning, etc.)

c. Connect static electrical ground connections to tank. Attach the delivery and vapor hoses, remove the delivery elbows and plug the liquid delivery fittings. (The latter can normally be accomplished by shutting the delivery valves).

d. Attach the test cap to the vapor recovery line of the delivery tank.

e. Connect the pressure (or vacuum) supply hose and, optionally, the pressure-vacuum relief valve to the shut-off valve. Attach a manometer to the pressure tap on the vapor-hose cap. Attach pressure source to the hose.

f. Connect compartments of the tank internally to each other if possible.

g. Open shut-off valve in the vapor recovery hose cap. Applying air pressure slowly, pressurize the tank, or alternatively the first compartment, to 18 inches of water (35 torr).

h. Close the shut-off valve, allow the pressure in the delivery tank to stabilize (adjust the pressure if necessary to maintain 18 inches of water (35 torr), record the time and initial pressure; begin the test period.

i. At the end of five (5) minutes, record the final time, pressure, and pressure change. Disconnect the pressure source from the pressure/vacuum supply hose, and slowly open the shut-off valve to bring the tank to atmospheric pressure.

j. Repeat for each compartment if they were not interconnected.

2. Vacuum Test

a. Connect vacuum source to pressure and vacuum supply hose.

b. Slowly evacuate the tank, or alternatively the first compartment, to six (6) inches of water (12 torr). Close the shut-off valve, allow the pressure in the delivery tank to stabilize (adjust the pressure if necessary to maintain six (6) inches of water (12 torr) vacuum), record the initial pressure and time; begin the test period. At the end of five (5) minutes, record the final pressure, time, and pressure change.

c. Repeat for each compartment if they were not interconnected.

E. Leak Check of Vapor Return Valve

1. After passing the vacuum and pressure tests, by making any needed repairs, pressurize the tank as in D.1. above to eighteen (18) inches of water (35 torr).

2. Close the internal valve(s) including the vapor valve(s) and "fire valves."

3. Relieve the pressure in the vapor return line to atmospheric pressure, leaving relief valve open to atmospheric pressure.

4. After five (5) minutes, seal the vapor return line by closing relief valve(s). Then open the internal valves including the vapor valve(s) and record the pressure, time, and pressure change. (To trace a leaking vapor valve it may be advantageous to open each vapor valve one at a time and record the pressure after each.)

5. The leak rate attributed to the vapor return valve shall be calculated by subtracting the pressure change in the most recent pressure test per D.1.i. above from the pressure change in E.4.

Appendix E

Emission Limit Conversion Procedure

The following procedure shall be used to convert emission limits expressed as lb VOC/gallon coating less water and exempt solvents to limits expressed as lb VOC/gallon solids. This example uses the emission limit of 3.7 lb VOC/gallon coating.

Assume VOC density of the 'Presumptive' RACT coating is 7.36 pounds per gallon because this same value was used to determine the "Presumptive" recommended RACT emission limits from volume solids data.

$$\frac{(3.7)\ \text{LB VOC}}{\text{GAL COATING LESS WATER}} \times \frac{1\ \text{GAL VOC} \times 100}{7.36\ \text{LB VOC}} = (50)\ \text{V0L\% VOC}$$

$$100 - (50)\ \text{V0L\% VOC} = (50)\ \text{V0L\% SOLIDS}$$

$$\frac{(3.7)\ \text{LB VOC}}{\text{GAL COATING LESS } H_2O} \times \frac{100\ \text{GAL COATING}}{(50)\ \text{GAL SOLIDS}} = \frac{(7.4)\ \text{LB VOC}}{\text{GAL SOLIDS}}$$

See "A Guideline For Surface Coating Calculations" EPA - 340/1-86-016 for additional examples.

The following table lists equivalent mass VOC/volume solids emission limits for various coating operations.

Equivalency Data for Surface Coating Processes
(VOC Density = 7.36 lb/gal)

| Industrial Finishing Categories | Lb VOC per Gallon Coating less water | Lb VOC per Gallon of Solids | Kg VOC per Liter of Solids |
|---|---|---|---|
| *Can Industry* | | | |
| Sheet Basecoat (Exterior and Interior) and over-varnish; two-piece can exterior (base-coat and over-varnish) | 2.8 | 4.5 | 0.55 |
| Two- and three-piece can interior body spray, two-piece can | 4.2 | 9.8 | 1.19 |

| | | | |
|---|---|---|---|
| exterior end spray or roll coat | | | |
| Three-piece can side-seam spray | 5.5 | 21.7 | 2.61 |
| End sealing compound | 3.7 | 7.4 | 0.88 |
| Any additional coats | 4.2 | 9.8 | 1.19 |
| *Coil Coating* | | | |
| Any coat | 2.6 | 4.0 | 0.48 |
| *Fabric Coating* | | | |
| Fabric coating line | 2.9 | 4.8 | 0.58 |
| Vinyl coating line | 3.8 | 7.9 | 0.93 |
| *Paper Coating* | | | |
| Coating line | 2.9 | 4.8 | 0.58 |
| *Automotive and Light-Duty Truck Assembly Plant* | | | |
| Primer (electro-deposition) application, flashoff area and oven | 1.9 | 2.6 | 0.31 |
| Topcoat application, flashoff area and oven | 2.8 | 4.5 | 0.55 |
| Final repair application, flashoff area and oven | 4.8 | 13.8 | 1.67 |
| *Metal Furniture* | | | |
| Coating line | 3.0 | 5.1 | 0.61 |
| *Magnet Wire* | | | |
| Wire coating operation | 1.7 | 2.2 | 0.26 |
| *Large Appliances* | | | |
| Prime, single, or topcoat application | 2.8 | 4.5 | 0.55 |

| | | | |
|---|---|---|---|
| area, flashoff area and oven | | | |
| *Miscellaneous Metal Parts and Products* | | | |
| Air-dried items | 3.5 | 6.7 | 0.80 |
| Clear-coated items | 4.3 | 10.3 | 1.25 |
| Extreme performance coatings | 3.5 | 6.7 | 0.80 |
| Other coatings and systems | 3.0 | 5.1 | 0.61 |
| *Plastic Film Coating* | | | |
| Plastic film coating line | 2.9 | 4.8 | 0.58 |