

SWCAA 490

EMISSION STANDARDS AND CONTROLS FOR SOURCES EMITTING VOLATILE ORGANIC COMPOUNDS



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SWCAA 490-010 Policy and Purpose

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; 96-21-101 filed 10/21/96, effective 11/21/96; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

- (1) It is the policy of the Southwest Clean Air Agency (SWCAA) under the authority vested in it by Chapter 43.21A, 70.94.141, and 70.94.152 RCW to provide for the systematic control of air pollution from air contaminant sources within Clark, Cowlitz, Lewis, Skamania, and Wahkiakum Counties.
- (2) The purpose of this regulation is to establish technically feasible and reasonably attainable emission standards for sources emitting volatile organic compounds (VOCs).

SWCAA 490-020 Definitions

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; 96-21-101 filed 10/21/96, effective 11/21/96; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

The definitions of terms contained in SWCAA 400 are by this reference incorporated into this regulation. Unless a different meaning is clearly required by context, the following words and phrases, as used in this regulation, shall have the following meanings:

- (1) "Bottom loading" means the filling of a tank through a line entering the bottom of the tank.
- (2) "Bulk gasoline plant" means a gasoline storage and transfer facility that receives more than ninety percent of its annual gasoline throughput by transport tank, and reloads gasoline into transport tanks.
- (3) "Class II hardboard paneling finish" means finishes that meet the specifications of Voluntary Product Standard PS-59-73 as approved by the American National Standards Institute.

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- (4) "Closed refinery system" means a system that will process or dispose of those VOCs collected from another system. The mass quantity of collected VOCs emitted to the ambient air from the closed refinery system shall not exceed that required for a disposal system.
- (5) "Condensate" means hydrocarbon liquid separated from a gas stream that condenses due to changes in the temperature or pressure and remains liquid at standard conditions.
- (6) "Condenser" means a device for cooling a gas stream to a temperature where specific VOCs become liquid and are removed.
- (7) "Control system" means one or more control devices, including condensers that are designed and operated to reduce the quantity of VOCs emitted to the atmosphere.
- (8) "Crude oil" means a naturally occurring mixture that consists of hydrocarbons and sulfur, nitrogen or oxygen derivatives of hydrocarbons which is a liquid at standard conditions.
- (9) "Cutback asphalt" means an asphalt that has been blended with petroleum distillates to reduce the viscosity for ease of handling and lower application temperature. An inverted emulsified asphalt shall be considered a cutback asphalt when the continuous phase of the emulsion is a cutback asphalt.
- (10) "Disposal system" means a process or device that reduces the mass quantity of the VOC that would have been emitted to the ambient air by at least ninety percent prior to their actual emission.
- (11) "Dry cleaning facility" means a facility engaged in the cleaning of fabrics in an essentially nonaqueous solvent by means of one or more washes in solvent, extraction of excess solvent by spinning, and drying by tumbling in an airstream. The facility includes, but is not limited to, any washer, dryer, filter and purification system(s), waste disposal system(s), holding tank(s), pump(s) and attendant piping and valve(s).
- (12) "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 liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.
- (13) "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 elastomeric materials.
- (14) "Gasoline" means a petroleum distillate which is a liquid at standard conditions and has a true vapor pressure greater than 200 mm of Hg (4 psia) at 20°C, and is used as a fuel for internal combustion engines.
- (15) "Gasoline dispensing facility" means any site dispensing gasoline into motor vehicle fuel tanks from stationary storage tanks.
- (16) "Gasoline loading terminal" means a gasoline transfer facility that receives more than ten percent of its annual gasoline throughput solely or in combination by pipeline, ship or barge, and loads gasoline into transport tanks.
- (17) "Hardboard" means a panel manufactured primarily from interfelted lignocellulosic fibers, which are consolidated under heat and pressure in a hot press.
- (18) "Hardwood plywood" means plywood whose surface layer is a veneer of hardwood.
- (19) "Lease custody transfer" means the transfer of produced crude oil or condensate, after processing or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.
- (20) "Liquid-mounted seal" means a primary seal mounted in continuous contact with the liquid between the tank wall and the floating roof.

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- (21) "Liquid service" means equipment that processes, transfers or contains a VOC or VOCs in the liquid phase.
- (22) "Low organic solvent coating" refers to coatings that contain less organic solvent than the conventional coatings used by the industry. Low organic solvent coatings include water-borne, higher solids, electrodeposition and powder coatings.
- (23) "Natural finish hardwood plywood panels" means panels whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.
- (24) "Packaging rotogravure printing" means rotogravure printing upon paper, paper board, metal foil, plastic film, and other substrates, which are, in subsequent operations, formed into packaging products and labels for articles to be sold.
- (25) "Petroleum liquids" means crude oil, condensate, and any finished or intermediate products manufactured or extracted in a petroleum refinery.
- (26) "Petroleum refinery" means a facility engaged in producing gasoline, aromatics, kerosene, distillate fuel oils, residual fuel oils, lubricants, asphalt, or other products by distilling crude oils or redistilling, cracking, extracting or reforming unfinished petroleum derivatives. Not included are facilities re-refining used motor oils or waste chemicals, processing finished petroleum products, separating blended products, or air blowing asphalt.
- (27) "Prime coat" means the first of two or more films of coating applied in an operation.
- (28) "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.
- (29) "Proper attachment fittings" means hardware for the attachment of gasoline transfer or vapor collection lines that meet or exceed industrial standards or specifications and the standards of other agencies or institutions responsible for safety and health.
- (30) "Publication rotogravure printing" means rotogravure printing upon paper that is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, and other types of printed materials.
- (31) "Refinery unit" means a set of components that are a part of a basic process operation, such as distillation, hydrotreating, cracking or reforming of hydrocarbons.
- (32) "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.
- (33) "Rotogravure printing" means the application of words, designs, and pictures to a substrate by means of a roll printing technique that involves intaglio or recessed image areas in the form of cells.
- (34) "Single coat" means only one film of coating is applied to the metal substrate.
- (35) "Submerged fill line" means a pipe, tube, fitting or other hardware for loading liquids into a tank with either a discharge opening flush with the tank bottom; or with a discharge opening below the lowest normal operating drawoff level or that level determined by a liquid depth two and one half times the fill line diameter when measured in the main portion of the tank, but not in sumps or similar protrusions.
- (36) "Submerged loading" means the filling of a tank with a submerged fill line descending nearly to the bottom.
- (37) "Suitable closure or cover" means a door, hatch, cover, lid, pipe cap, pipe blind, valve or similar device that prevents the accidental spilling or emitting of VOC. Pressure relief valves, aspirator vents or other devices specifically required for safety and fire protection are not included.

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- (38) "Thin particleboard" means a manufactured board one-quarter inch or less in thickness made of individual wood particles that have been coated with a binder and formed into flat sheets by pressure.
- (39) "Tileboard" means paneling that has a colored waterproof surface coating.
- (40) "Topcoat" means the final film or series of films of coating applied in a two-coat (or more) operation.
- (41) "Transport tank" means a container used for shipping gasoline on land.
- (42) "True vapor pressure" means the equilibrium partial pressure of a petroleum liquid as determined with methods described in American Petroleum Institute Bulletin 2517, 1980.
- (43) "Unit turnaround" means the procedure of shutting down, repairing, inspecting, and restarting a unit.
- (44) "Valves not externally regulated" means valves that have no external controls, such as in-line check valves.
- (45) "Vapor collection system" means a closed system to conduct vapors displaced from a tank being filled into the tank being emptied, a vapor holding tank, or a vapor control system.
- (46) "Vapor control system" means a system designed and operated to reduce or limit the emission of VOCs, or to recover the VOCs to prevent their emission into the ambient air.
- (47) "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 tank wall, the liquid surface, and the floating roof.
- (48) "Volatile organic compound (VOC)" means any organic compound that participates in atmospheric photochemical reactions; that is, any organic compound other than those that the administrator designates 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 nonreactive organic compounds when determining compliance with a standard.
- (49) "Waxy, heavy pour crude oil" means a crude oil with a pour point of 50°F or higher as determined by the American Society for Testing and Materials Standard D97-66, "Test for Pour Point of Petroleum Oils."

SWCAA 490-025 General Applicability

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; 96-21-101 filed 10/21/96, effective 11/21/96; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

In addition to the general applicability of SWCAA 400 to all emission sources, specific emission standards listed in this regulation will take precedence over the general emission standards of SWCAA 400.

- (1) This regulation shall apply to the specified emission sources of VOCs located in or operating within designated ozone nonattainment areas and areas covered by a maintenance plan within the jurisdiction of SWCAA.
- (2) This regulation does not apply to those sources under the jurisdiction of the Energy Facility Site Evaluation Council (EFSEC).
- (3) A source of VOC emissions not belonging to any of the categories listed in SWCAA 490-030 nor specifically identified in any section, but which is located on the same or adjacent

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- property and owned or operated by the same person as a regulated emission source, shall not be required to comply with this regulation.
- (4) Sources of VOC emissions may be exempted, by the director, from any or all requirements to control or reduce the emissions of VOCs when:
- (a) The source is a development operation and the equipment is used exclusively for research, laboratory analysis or determination of product quality and commercial acceptance, provided emissions of VOCs from such operations do not exceed 300 kg (660 lbs) per month; or
 - (b) The source has emissions of VOCs which do not exceed 18 kg (40 lbs) per month and registration is not required under SWCAA 490-030; or
 - (c) The source is a spray booth that is used solely for maintenance and utility activities and whose emissions do not exceed 18 kg (40 lbs) per month.
- (5) Sources of VOCs may be granted exemptions from emissions standards for a period not to exceed thirty days if the source is a newly permitted source that is to replace a similar permitted source and the new source is intended to utilize the existing emission control system. This provision is intended to apply to a break-in period prior to the shutdown and removal of the existing source.

SWCAA 490-030 Registration and Reporting

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; 96-21-101 filed 10/21/96, effective 11/21/96; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

- (1) The owner or operator of a stationary emission source of VOCs in the following source categories and located in a designated ozone nonattainment area or area covered by a maintenance plan shall register the source with SWCAA unless registration is required by the Energy Facility Site Evaluation Council (EFSEC) as provided under RCW 80.50.
- (a) Petroleum refineries.
 - (b) Petroleum liquid storage tanks.
 - (c) Gasoline loading terminals.
 - (d) Bulk gasoline plants.
 - (e) Gasoline dispensing facilities.
 - (f) Surface coaters.
 - (g) Open top vapor degreasers.
 - (h) Conveyorized degreasers.
 - (i) Gasoline transport tanks.
 - (j) Vapor collection systems.
 - (k) Perchloroethylene dry cleaning systems.
 - (l) Graphic arts systems.
 - (m) Surface coaters of miscellaneous metal parts and products.
 - (n) Synthesized pharmaceutical manufacturing facilities.
 - (o) Flatwood panel manufacturers and surface finishing facilities.
- (2) A new emission source of VOCs that must comply with any requirements in SWCAA 490-040, 490-200, 490-201, 490-202, 490-203, 490-204, 490-205, 490-206 and 490-207, shall comply with the requirements of SWCAA 400-100 and shall register with SWCAA prior to operation of the new source, and shall submit sufficient information to demonstrate that the new source is capable of complying with the requirements in this regulation. An

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opportunity shall be provided for an inspection of the new source by SWCAA inspectors prior to its operation.

SWCAA 490-040 Requirements

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

To demonstrate compliance with this regulation, refer to SWCAA 400-105.

(1) Petroleum refineries.

This regulation shall apply to all petroleum refineries with a crude oil or feed stock capacity greater than one million four hundred thirty thousand liters (1,430,000 l or 9,000 bbl) per day.

- (a) Vacuum producing system.
 - (i) Noncondensable VOC from vacuum producing systems shall be piped to an appropriate firebox, incinerator or to a closed refinery system.
 - (ii) Hot wells associated with contact condensers shall be tightly covered and the collected VOC introduced into a closed refinery system.
- (b) Wastewater separator.
 - (i) Wastewater separator forebays shall incorporate a floating pontoon or fixed solid cover with all openings sealed, totally enclosing the compartmented liquid contents, or a floating pontoon or a double deck-type cover equipped with closure seals between the cover edge and compartment wall.
 - (ii) Accesses for gauging and sampling shall be designed to minimize VOC emissions during actual use. All access points shall be closed with suitable covers when not in use.
- (c) Process unit turnaround.
 - (i) The VOC contained in a process unit to be depressurized for turnaround shall be introduced to a closed refinery system, combusted by a flare, or vented to a disposal system.
 - (ii) The pressure in a process unit following depressurization for turnaround shall be less than five psig before venting to the ambient air.
 - (iii) Venting or depressurization to the ambient air of a process unit for turnaround at a pressure greater than five psig shall be allowed if the owner demonstrates the actual emission of VOC to the ambient air is less than permitted by SWCAA 490-040 (1)(c)(ii).
- (d) Maintenance and operation of emission control equipment. Equipment for the reduction, collection or disposal of VOC shall be maintained and operated in a manner consistent with the level of maintenance and housekeeping of the overall plant.

(2) Petroleum liquid storage tanks.

- (a) All fixed-roof tanks (except as noted in subparagraph (d) of this subsection) storing volatile organic petroleum liquids with a true vapor pressure as stored greater than 78 mm of Hg (1.5 psi) at actual monthly average storage temperatures and having a capacity greater than one hundred fifty thousand liters (40,000 gallons) shall comply with one of the following:

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- (i) Meet the equipment specifications and maintenance requirements of the federal standards of performance for new stationary sources - Storage Vessels for Petroleum Liquids (40 CFR 60, subpart K); or
 - (ii) Be retrofitted with a floating roof or internal floating cover using a metallic seal or a nonmetallic resilient seal at least meeting the equipment specifications of the federal standards referred to in SWCAA 490-040 (2)(a)(i) or its equivalent; or
 - (iii) Be fitted with a floating roof or internal floating cover meeting the manufacturer's specifications in effect when installed.
- (b) All seals used in SWCAA 490-040 (2)(a)(ii) and (iii) are to be maintained in good operating condition and the seal fabric shall contain no visible holes, tears or other openings.
- (c) All openings not related to safety are to be sealed with suitable closures.
- (d) Tanks used for the storage of gasoline in bulk gasoline plants and equipped with vapor balance systems as required in SWCAA 490-040 (4)(b) shall be exempt from the requirements of SWCAA 490-040(2).
- (3) **Gasoline loading terminals.**
- (a) This regulation shall apply to all gasoline loading terminals with an average annual daily gasoline throughput greater than seventy-five thousand liters (75,000 l or 20,000 gallons).
 - (b) Loading facilities. Facilities for the purpose of loading gasoline into any transport tank shall be equipped with a vapor recovery system (VRS) as described in SWCAA 490-040 (3)(c) and comply with the following conditions:
 - (i) The loading facility shall employ submerged or bottom loading for all transport tanks.
 - (ii) The VRS shall be connected to the transport tank being loaded and shall operate during the entire loading of every transport tank loaded at the facility.
 - (iii) The loading of all transport tanks shall be performed such that ninety percent by weight of the gasoline vapors displaced during filling are prevented from being released to the ambient air. Emissions from pressure relief valves shall not be included in the controlled emissions when the back pressure in the VRS collection lines is lower than the relief pressure setting of the transport tank's relief valves.
 - (iv) All loading lines and vapor lines shall be equipped to close automatically upon disconnect. The point of closure shall be on the tank side of any hose or intermediate connecting line.
 - (c) Vapor recovery system (VRS). The VRS shall be designed and built according to accepted industrial practices and meet the following conditions:
 - (i) The VRS shall prevent at least ninety percent by weight of the gasoline vapors displaced during loading of each transport tank from entering the ambient air and in no case shall the gasoline vapors emitted to the ambient air exceed eighty milligrams per liter of gasoline loaded.
 - (ii) The VRS shall be equipped with a signal device to alert personnel when the system is not operating or unintentionally shuts down.
 - (iii) The back pressure in the VRS collection lines shall not exceed the transport tank's pressure relief settings.

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- (d) Alternative loading facility. The loading of transport tanks by other means and using other vapor control systems shall require the facility owner to demonstrate that the emission of gasoline vapors to the ambient air is less than eighty milligrams per liter of gasoline loaded.
- (4) **Bulk gasoline plants.**
 - (a) This regulation shall apply to all bulk gasoline plants with an annual average daily gasoline throughput greater than fifteen thousand liters (15,000 liters or 4,000 gallons).
 - (b) Storage tanks. All storage tanks with a capacity greater than two thousand one hundred liters (2100 liters or 550 gallons) and used for the storage of gasoline shall comply with the following conditions:
 - (i) Each storage tank shall be equipped with a submerged fill line.
 - (ii) Each storage tank shall be equipped for vapor balancing of gasoline vapors with transport tanks during gasoline transfer operations.
 - (iii) The vapor line fittings on the storage tank side of break points with the transport tank vapor connection pipe or hose shall be equipped to close automatically upon planned or unintentional disconnect.
 - (iv) The pressure relief valves on storage tanks shall be set at the highest possible pressure consistent with local and state codes for fire and safety.
 - (c) Transport tanks. All transport tanks, except those meeting the conditions in SWCAA 490-040 (4)(d), transferring gasoline with storage tanks in a bulk gasoline plant shall comply with the following conditions:
 - (i) The transport tank shall be equipped with the proper attachment fittings to make vapor tight connections for vapor balancing with storage tanks.
 - (ii) The vapor line fittings on the transport tank side of break points with the storage tank connection pipe or hose shall be equipped to close automatically upon planned or unintentional disconnect.
 - (iii) The pressure relief valves on transport tanks shall be set at the highest possible pressure consistent with local and state codes for fire and safety.
 - (d) Transport tanks used for gasoline and meeting all of the following conditions shall be exempt from the requirement to be equipped with any attachment fitting for vapor balance lines:
 - (i) The transport tank is used exclusively for the delivery of gasoline into storage tanks of a facility exempt from the vapor balance requirements of SWCAA 490-040(5); and
 - (ii) The transport tank has a total capacity less than fifteen thousand liters (15,000 liters or 4,000 gallons) and is of a compartmented design and construction requiring the installation of four or more separate vapor balance fittings.
 - (e) Gasoline transfer operations. No owner or operator of a bulk gasoline plant or transport tank shall allow the transfer of gasoline between a transport tank and a storage tank except under the following conditions:
 - (i) All tanks shall be submerged filled or bottom loaded.

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- (ii) The loading of all tanks, except those exempted under SWCAA 490-040 (4)(d) shall be performed such that ninety percent by weight of the gasoline vapors displaced during filling are prevented from being released into the ambient air. Emissions from pressure relief valves shall not be included in the controlled emissions.
 - (f) Equipment or system failures. Failures or leaks in the vapor balance system shall be limited by the following conditions:
 - (i) During the months of April, May, June, July, August, September and October, failures of the vapor balance system to comply with this regulation shall require that gasoline transfer operations stop for the failed part of the system. Other transfer points that can operate in compliance may be used.
 - (ii) Loading or unloading of the transport tank connected to the failed part of the vapor balance system may be completed.
 - (iii) Breakdowns and upset conditions during all months of the year shall also comply with the provisions of SWCAA 400-105(5).
 - (g) The owner or operator of a bulk gasoline plant or transport tank shall take all reasonable necessary measures to prevent the spilling, discarding in sewers, storing in open containers or handling of gasoline in a manner on the plant site that will result in evaporation to the ambient air.
- (5) **Gasoline dispensing facilities (Stage I).**
- (a) This regulation shall apply to all gasoline dispensing facilities with a total annual gasoline throughput greater than 200,000 gallons (16,670 gallons per month) and total gasoline storage capacity greater than 10,000 gallons.
 - (b) All gasoline storage tanks of the facilities defined in SWCAA 490-040 (5)(a) shall be equipped with submerged or bottom fill lines and fittings for vapor balancing gasoline vapors with the delivery transport tank.
 - (c) Gasoline storage tanks with offset fill lines shall be exempt from the requirement of SWCAA 490-040 (5)(b) if installed prior to January 1, 1979.
 - (d) The vapor balance system (for the purpose of measuring compliance with the emission control efficiency) shall consist of the transport tank, gasoline vapor transfer lines, storage tank and all tank vents. The vapor balance system shall prevent at least ninety percent of the displaced gasoline vapors from entering the ambient air. A vapor balance system that is designed, built and operated according to accepted industrial practices will satisfy this requirement.
 - (e) The owner or operator of a gasoline dispensing facility shall not permit the loading of gasoline into a storage tank equipped with vapor balance fittings unless the vapor balance system is attached to the transport tank and operated satisfactorily.
- (6) **Surface coaters.**
- The operation of a coater and dryer, that may serve one or more process lines, shall comply with the following emission limits if the potential uncontrolled emissions of VOC from the coater, flashoff areas, and dryer would be greater than 18 kg (40 pounds) in any given twenty-four hour period. The emission limits and uncontrolled emission quantity shall include the additional quantity of emissions from the dryer during the twelve-hour period after application of the coating.

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Process	VOC Limitation (Excluding Water)	
	Grams/Liter of Coating	lb/Gallon of Coating
Can Coating		
Sheet basecoat and overvarnish; two-piece can exterior	340	2.8
Two and three piece can interior body spray, two piece can exterior end	510	4.2
Side-seam spray	660	5.5
End sealing compound	440	3.7
Coil coating	310	2.6
Fabric coating	350	2.9
Vinyl coating	450	3.8
Paper coating	350	2.9
Auto and light duty truck coating		
Prime	230	1.9
Topcoat	340	2.8
Repair	580	4.8
Metal furniture coating	360	3.0
Magnet wire coating	200	1.7
Large appliance coating	340	2.8

(7) Open top vapor degreasers.

- (a) All open top vapor degreasers shall:
 - (i) Have a cover that may be readily opened and closed. When a degreaser is equipped with a lip exhaust, the cover shall be located below the lip exhaust. When a degreaser has a freeboard ratio equal to or greater than 0.75 and the opening is greater than one square meter (10 square feet) the cover shall be power operated.
 - (ii) Have one of the following:
 - (A) A freeboard ratio equal to or greater than 0.75; or
 - (B) A freeboard chiller; or
 - (C) A closed design such that the cover opens only when the part enters or exits the degreaser.
 - (iii) Be equipped with at least the following three safety switches:
 - (A) Condenser-flow switch and thermostat (shuts off sump heat if coolant is either not circulating or too warm); and

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- (B) Spray safety switch (shuts off spray pump if the vapor level drops excessively; and
- (C) Vapor level control thermostat (shuts off sump heat when vapor level rises too high).
- (iv) Post a permanent and conspicuous pictograph or instructions clearly explaining the following work practices:
 - (A) Do not degrease porous or absorbent materials such as cloth, leather, wood or rope.
 - (B) The cover of the degreaser should be closed at all times except when processing workloads.
 - (C) When the cover is open the lip of the degreaser should not be exposed to steady drafts greater than 15.3 meters per minute (50 feet per minute).
 - (D) Rack parts so as to facilitate solvent drainage from the parts.
 - (E) Workloads should not occupy more than one-half of the vapor-air interface area.
 - (F) When using a powered hoist, the vertical speed of parts in and out of the vapor zone should be less than 3.35 meters per minute (11 feet per minute).
 - (G) Degrease the workload in the vapor zone until condensation ceases.
 - (H) Spraying operations should be done within the vapor layer.
 - (I) Hold parts in the degreaser until visually dry.
 - (J) When equipped with a lip exhaust, the fan should be turned off when the cover is closed.
 - (K) The condenser water shall be turned on before the sump heater when starting up a cold vapor degreaser. The sump heater shall be turned off and the solvent vapor layer allowed to collapse before closing the condenser water when shutting down a hot vapor degreaser.
 - (L) Water shall not be visible in the solvent stream from the water separator.
- (b) A routine inspection and maintenance program shall be implemented for the purpose of preventing and correcting solvent losses. For example, leaks from drain taps, cracked gaskets, and malfunctioning equipment must be repaired immediately.
- (c) Sump drainage and transfer of hot or warm solvent shall be carried out using threaded or other leakproof couplings.
- (d) Still and sump bottoms shall be kept in closed containers.
- (e) Waste solvent shall be stored in covered containers and returned to the supplier or to a firm that processes solvents for disposal.
- (8) **Conveyorized degreasers.**
 - (a) The owner or operator of conveyorized cold cleaners and conveyorized vapor degreasers shall comply with the following operating requirements:
 - (i) Exhaust ventilation shall not exceed twenty cubic meters per minute per square meter (65 cfm per ft.²) of degreaser opening, unless necessary to meet OSHA requirements.
 - (ii) Post in the immediate work area a permanent and conspicuous pictograph or instructions clearly explaining the following work practices:
 - (A) Rack parts for best drainage.

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- (B) Maintain vertical speed of conveyed parts to less than 3.35 meters per minute (11 feet per minute).
- (C) The condenser water shall be turned on before the sump heater when starting up a cold vapor degreaser. The sump heater shall be turned off and the solvent vapor layer allowed to collapse before closing the condenser water when shutting down a hot vapor degreaser.
- (D) Water shall not be visible in the solvent stream from the water separator.
- (iii) Vapor degreasers shall be equipped with at least the following three safety switches:
 - (A) Condenser flow switch and thermostat (shuts off sump heat if coolant is either not circulating or too warm); and
 - (B) Spray safety switch (shuts off spray pump if the vapor level drops excessively); and
 - (C) Vapor level control thermostat (shuts off sump heat when vapor level rises too high).
- (b) A routine inspection and maintenance program shall be implemented for the purpose of preventing and correcting solvent losses. For example, leaks from drain taps, cracked gaskets, and malfunctioning equipment must be repaired immediately.
- (c) Sump drainage and transfer of hot or warm solvent shall be carried out using threaded or other leakproof couplings.
- (d) Still and sump bottoms shall be kept in closed containers.
- (e) Waste solvent shall be stored in covered containers and returned to the supplier or to a firm that processes solvents for disposal.
- (f) All conveyORIZED cold cleaners and conveyORIZED vapor degreasers with air/vapor interfaces of 2.0 m² or greater shall have a carbon adsorption system, exhausting less than 25 ppm of solvent averaged over a complete adsorption cycle (based on exhaust ventilation of 15 m³ per min per m² of air/vapor area, when downtime covers are open), or a system with control effectiveness equal to or better than a carbon adsorption system.
- (9) **Cutback asphalt paving.**
 - (a) All paving applications of cutback asphalts are prohibited during the months of April, May, June, July, August, September and October, except as provided for in SWCAA 490-040 (9)(b).
 - (b) The following paving uses and applications of cutback asphalts are permitted during all months of the year.
 - (i) As a penetrating prime coat on aggregate bases prior to paving.
 - (ii) The manufacture of patching mixes used exclusively for pavement maintenance and needed to be stockpiled for times longer than one month.
 - (iii) All paving uses when the temperature during application is below 10°C (50°F). Any person using cutback asphalt for paving shall demonstrate that the ambient air temperature at 8 a.m. (PST) is below 50°F. The paving application of cutback asphalt when the ambient air temperature is 50°F or higher is in violation of this regulation.
- (10) **Cold cleaners.**
 - (a) The owners or operators of all cold cleaners shall comply with the following equipment specifications:

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- (i) Be equipped with a cover that is readily opened and closed.
- (ii) Be equipped with a drain rack that returns the drained solvent to the solvent bath.
- (iii) Have a freeboard ratio of at least 0.5.
- (iv) Have a visible fill line.
- (b) An owner or operator of a cold cleaner shall be responsible for following the required operating parameters and work practices. The owner shall post and maintain in the work area of each cold cleaner a pictograph or instructions clearly explaining the following work practices:
 - (i) The solvent level shall not be above the fill line.
 - (ii) The spraying of parts to be cleaned shall be performed only within the confines of the cold cleaner.
 - (iii) The cover of the cold cleaner shall be closed when not in use or when parts are being soaked or cleaned by solvent agitation.
 - (iv) Solvent-cleaned parts shall be rotated to drain cavities or blind holes and then set to drain until dripping has stopped.
 - (v) Waste solvent shall be stored in covered containers and returned to the supplier or to a firm that processes solvents for disposal.
- (c) The owner or operator shall maintain cold cleaners in good working condition and free of solvent leaks.
- (d) If the solvent has a vapor pressure greater than 2.0 kPa (0.3 psi) measured at 38°C (100°F), or if the solvent is agitated or heated, then the cover must be designed so that it can be easily operated with one hand.
- (e) If the solvent has a vapor pressure greater than 4.3 kPa (0.6 psi) measured at 38°C (100°F), then the drainage facility must be internal, so that parts are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.
- (f) If the solvent has a vapor pressure greater than 4.3 kPa (0.6 psi) measured at 38°C (100°F), or if the solvent is heated above 50°C (120°F), one of the following solvent vapor control systems must be used:
 - (i) The freeboard ratio must be equal to or greater than 0.70; or
 - (ii) Water must be kept over the solvent. The solvent must be more dense and insoluble in water.

SWCAA 490-080 Exceptions and Alternative Methods

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; 96-21-101 filed 10/21/96, effective 11/21/96; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

- (1) Other emission reduction methods may be used if the source operator demonstrates to SWCAA that they are at least as effective as the required methods; and
- (2) The operation of a natural gas-fired incinerator and associated capture system installed for the purpose of complying with this regulation shall be required only during the months of April, May, June, July, August, September and October, unless the operation of such devices is required for purposes of occupational health or safety, or for the control of toxic substances, malodors, or other regulated pollutants.

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SWCAA 490-090 New Source Review

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; 96-21-101 filed 10/21/96, effective 11/21/96; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

The provisions of SWCAA 400-110 shall apply to all new sources and emissions units to which this regulation is applicable.

SWCAA 490-200 Petroleum Refinery Equipment Leaks

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

- (1) Specific applicability. This section shall apply to all petroleum refineries as qualified in SWCAA 490-025.
- (2) Provisions for specific processes.
 - (a) The owner(s) or operator(s) of a petroleum refinery shall:
 - (i) Develop and conduct a monitoring program consistent with the provisions in SWCAA 490-200(3), 490-200(4), 490-200(5), and 400-105;
 - (ii) Record all leaking components that have a VOC concentration greater than 10,000 ppm when tested according to the provisions in SWCAA 490-200(3) and place an identification tag on each component consistent with the provisions of SWCAA 490-200 (4)(c);
 - (iii) Correct and retest the leaking component, as defined in SWCAA 490-200 (2)(a)(ii), as soon as practicable, but not later than fifteen days after the leak is recorded. If a leak continues after all reasonable corrective actions have been taken, then the component shall be repaired or replaced on the next scheduled turnaround.
 - (iv) Identify all leaking components, as defined in SWCAA 490-200 (2)(a)(ii), that cannot be corrected until the refinery unit is shut down for turnaround.
 - (b) The owner or operator of a petroleum refinery shall not install or operate a valve at the end of a pipe or line containing VOC unless the pipe or line is sealed with a second suitable closure. Exceptions to this requirement are the ends of a pipe or line connected to pressure relief valves, aspirator vents or other devices specifically required to be open for safety protection. The sealing device may be removed only when a sample is being taken or during maintenance operations.
- (3) Testing procedures. To demonstrate compliance with this regulation, refer to SWCAA 400-105(5).
- (4) Monitoring.
 - (a) The owner or operator of a petroleum refinery shall conduct a monitoring program consistent with the following provisions:
 - (i) Monitor yearly by the methods referenced in SWCAA 490-200(3) all pump seals, pipeline valves in liquid service and process drains;
 - (ii) Monitor quarterly by the methods referenced in SWCAA 490-200(3) all compressor seals, pipeline valves in gaseous service and pressure relief valves in gaseous service;
 - (iii) Monitor weekly by visual methods all pump seals;

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- (iv) Monitor immediately any pump seal from which liquids are observed leaking;
 - (v) Monitor any relief valve within twenty-four hours after it has vented to the atmosphere; and
 - (vi) After a leaking component is repaired, monitor for leaks prior to return to service.
- (b) Pressure relief devices that are connected to an operating flare header, vapor recovery device, inaccessible valves, storage tank valves, and valves that are not externally regulated are exempt from the monitoring requirements in SWCAA 490-200 (4)(a).
- (c) The owner or operator of a petroleum refinery, upon the detection of a leaking component, as defined in SWCAA 490-200 (2)(a)(ii), 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 leak is corrected.
- (5) Recordkeeping.
- (a) The owner or operator of a petroleum refinery shall maintain a leaking component's monitoring log as specified in SWCAA 490-200 (2)(a)(ii) that shall contain, at a minimum, the following data:
 - (i) The name of the process unit where the component is located.
 - (ii) The type of component (e.g., valve, seal).
 - (iii) The tag number of the component.
 - (iv) The date on which a leaking component is discovered.
 - (v) The date on which a leaking component is repaired.
 - (vi) The date and instrument reading of the recheck procedure after a leaking component is repaired.
 - (vii) A record of the calibration of the monitoring instrument.
 - (viii) Those leaks that cannot be repaired until turnaround.
 - (ix) The total number of components checked and the total number of components found leaking.
 - (b) Copies of the monitoring log shall be retained by the owner or operator for a minimum of two years after the date on which the record was made or the report prepared.
 - (c) Copies of the monitoring log shall immediately be made available to SWCAA, upon verbal or written request, at any reasonable time.
- (6) Reporting. The owner or operator of a petroleum refinery shall notify SWCAA in writing within forty-five days following each quarterly or annual inspection for component leaks when:
- (a) The number of discovered leaks has increased by more than ten percent above the number recorded during the last inspection of the same components;
 - (b) The number of leaking components has increased for two consecutive quarterly or annual inspections;
 - (c) The number of leaks not corrected within fifteen days exceeds five percent of the leaks detected;
 - (d) The next scheduled process unit turnaround needed to repair an uncorrectable leak is more than twelve months away.

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- (7) Petition for alternative monitoring.
- (a) After two complete liquid service inspections and five complete gaseous service inspections, the owner or operator of a petroleum refinery may petition the director for alternative monitoring procedures or a reduction in monitoring frequency.
 - (b) A petition for alternative monitoring procedures shall contain:
 - (i) The name and address of the company and the name and telephone number of the responsible person over whose signature the petition is submitted;
 - (ii) A detailed description of the problems encountered under SWCAA 490-200(4); and
 - (iii) A detailed description of the alternative monitoring procedures and how this alternative procedure will solve or reduce the problems encountered under SWCAA 490-200(4).
 - (c) A petition for a reduction in monitoring frequency shall contain:
 - (i) The information requested in SWCAA 490-200 (7)(b)(i);
 - (ii) A detailed description of the proposed component-monitoring schedule;
 - (iii) A demonstration by the owner or operator that the facility is currently operating with a low level of component leaks and is committed to a maintenance program that will assure a frequency and severity of component leaks as good as that attainable under SWCAA 490-200(2).
 - (d) An approved petition for a reduction in monitoring frequency shall begin with the next quarterly inspection and shall be valid for a period of twelve quarters (three years). At the time of the last inspection in the twelve quarters, a new submittal of the information required in SWCAA 490-200 (7)(c) shall be made if the reduced frequency of monitoring is to continue.
 - (e) SWCAA may approve a part or all of a petition for alternative monitoring requested under SWCAA 490-200 (7)(b) or (c). Approval or disapproval will be in writing and within forty-five calendar days of receipt of the petition by SWCAA. A failure to approve or disapprove a new petition or petition for renewal within the stated time limit shall be taken as an approval.

SWCAA 490-201 Petroleum Liquid Storage in External Floating Roof Tanks

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; 96-21-101 filed 10/21/96, effective 11/21/96; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

- (1) Specific applicability.
- (a) This section shall apply to all petroleum liquid storage vessels equipped with external floating roofs, having capacities greater than 150,000 liters (40,000 gallons), and as qualified in SWCAA 490-025.
 - (b) This section does not apply to petroleum liquid storage vessels that:
 - (i) Are used to store waxy, heavy pour crude oil; or
 - (ii) Have capacities less than 1,600,000 liters (420,000 gallons) and are used to store produced crude oil and condensate prior to lease custody transfer; or
 - (iii) Contain a petroleum liquid with a true vapor pressure of less than 10.5 kPa (1.5 psia); or
 - (iv) Contain a petroleum liquid with a true vapor pressure less than 27.6 kPa (4.0 psia); are of welded construction; and presently possess a metallic-type shoe

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- seal, a liquid-mounted foam seal, a liquid-mounted liquid filled type seal, or other closure device of demonstrated equivalence approved by SWCAA; or
- (v) Are of welded construction, equipped with a metallic-type shoe primary seal and have secondary seal from the top of the shoe seal to the tank wall (shoe-mounted secondary seal).
- (2) Provisions for specific processes.
- (a) No owner(s) or operator(s) of a petroleum liquid storage vessel shall store a petroleum liquid in that vessel unless:
 - (i) The vessel has been fitted with:
 - (A) A continuous secondary seal extending from the floating roof to the tank wall (rim-mounted secondary seal); or
 - (B) A closure or other device which controls VOC emissions with an effectiveness equal to or greater than a seal required under SWCAA 490-201 (2)(a)(i)(A) and approved by SWCAA.
 - (ii) All seal closure devices meet the following requirements:
 - (A) There are no visible holes, tears, or other openings in the seal or seal fabric;
 - (B) The seal is intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall; and
 - (C) For vapor mounted primary seals, the accumulated area of gaps exceeding 0.32 cm (1/8 inch) in width between the secondary seal and the tank wall shall not exceed 21.2 cm² per meter of tank diameter (1.0 in² per foot of tank diameter), as determined by the method in SWCAA 490-201(3).
 - (iii) All openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves, are:
 - (A) Equipped with covers, seals, or lids in the closed position except when the openings are in actual use; and
 - (B) Equipped with projections into the tank that remain below the liquid surface at all times.
 - (iv) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;
 - (v) Rim vents are set to open when the roof is being floated off the leg supports or at the manufacturer's recommended setting; and
 - (vi) Emergency roof drains are provided with slotted membrane fabric covers or equivalent covers that cover at least ninety percent of the area of the opening.
 - (b) The owner(s) or operator(s) of a petroleum liquid storage vessel with an external floating roof subject to this regulation shall:
 - (i) Perform routine inspections annually in order to insure compliance with SWCAA 490-201 (2)(a) and the inspection shall include a visual inspection of the secondary seal gap;
 - (ii) Measure the secondary seal gap annually in accordance with SWCAA 490-201(3) when the floating roof is equipped with a vapor-mounted primary seal; and
 - (iii) Maintain records of the types of volatile petroleum liquids stored, the maximum true vapor pressure of the liquid as stored, and the results of the inspections performed in SWCAA 490-201 (2)(b)(i) and (ii).

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- (c) The owner(s) or operator(s) of a petroleum liquid storage vessel with an external floating roof exempted from this regulation by SWCAA 490-201 (1)(b)(iii), but containing a petroleum liquid with a true vapor pressure greater than 7.0 kPa (1.0 psi), shall maintain records of the average monthly storage temperature, the type of liquid, and the maximum true vapor pressure for all petroleum liquids with a true vapor pressure greater than 7.0 kPa.
 - (d) Copies of all records under SWCAA 490-201 (2)(b) and (c) shall be retained by the owner(s) or operator(s) for a minimum of two years after the date on which the record was made.
 - (e) Copies of all records required under SWCAA 490-201 shall immediately be made available to the director, upon verbal or written request, at any reasonable time.
- (3) Testing and monitoring.
- (a) The owner or operator of a storage vessel covered under SWCAA 490-201 shall demonstrate compliance by the methods of this subsection or an alternative method approved by SWCAA.
 - (b) A person proposing to measure the seal fit of a storage vessel in order to comply with this section shall notify SWCAA of the intent to measure not less than five working days before the measurement so the director or a representative may observe the measurement if desired.
 - (c) Compliance with SWCAA 490-201 (2)(a)(ii)(C) shall be determined by physically measuring the length and width of all gaps around the circumference of the secondary seal in each place where a 0.32 cm (1/8 in.) diameter probe passes freely (without forcing or binding against the seal) between the seal and the tank wall and summing the area of the individual gaps.

SWCAA 490-202 Leaks from Gasoline Transport Tanks and Vapor Collection Systems

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; 96-21-101 filed 10/21/96, effective 11/21/96; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

- (1) Specific applicability.
This section shall apply to all gasoline transport tanks equipped for gasoline vapor collection and all vapor collection systems at gasoline loading terminals, bulk gasoline plants and gasoline dispensing facilities as qualified in SWCAA 490-025 and 490-040.
- (2) Provisions for specific processes.
 - (a) The owner(s) or operator(s) of a gasoline loading or unloading facility shall only allow the transfer of gasoline between the facility and a transport tank when a current leak test certification for the transport tank is on file with the facility or a valid inspection sticker is displayed on the vehicle.
 - (b) The owner(s) or operator(s) of a transport tank shall not make any connection to the tank for the purpose of loading or unloading gasoline, except in the case of an emergency, unless the gasoline transport tank:
 - (i) Is tested annually according to the schedule in SWCAA 490-202 (3)(b) and the test procedure referenced in SWCAA 490-202 (3)(c);
 - (ii) Sustains a pressure change of no more than 0.75 kilopascals (3 inches of water) in five minutes when pressurized to a gauge pressure of 4.5 kilopascals (460 mm H₂O or 18 inches of water) or evacuated to a gauge

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pressure of 1.5 kilopascals (150 mm H₂O or 6 inches of water) during the testing required in SWCAA 490-202 (2)(b)(i). Effective December 15, 1997, certification and allowable pressures shall be as provided below in accordance with 40 CFR 63.420 et seq. (Subpart R);

Tank or Compartment Capacity liters (gallons)	Certification Pressure mm H ₂ O (in. H ₂ O)	Pressure Change Any Time mm H ₂ O (in. H ₂ O)
9464 or more (2500 or more)	25 (1.0)	64 (2.5)
9463 to 5676 (2499 to 1500)	38 (1.5)	76 (3.0)
5679 to 3785 (1499 to 1000)	51 (2.0)	89 (3.5)
3782 or less (999 or less)	64 (2.5)	102 (4.0)

- (iii) Is repaired by the owner(s) or operator(s) and retested within fifteen days of testing if it does not meet the criteria of SWCAA 490-202 (2)(b)(ii);
- (iv) All transport tanks transferring gasoline at bulk plants and stationary tanks (including dispensing facilities) shall use gasoline vapor recovery equipment as provided in SWCAA 491-040 (3).
- (c) The owner(s) or operator(s) of a transport tank shall:
 - (i) Have a current leak test certification for the transport tank on file with each gasoline loading or unloading facility where gasoline is transferred; or
 - (ii) Display a sticker near the Department of Transportation certification plate required by 49 CFR 178.340-10b which:
 - (A) Shows the date that the gasoline tank truck last passed the test required in SWCAA 490-202 (2)(b)(i) and (ii);
 - (B) Shows the identification number of the gasoline tank truck tank;
 - (C) Shows the certification number of the tanker; and
 - (D) Shows the expiration date.
- (d) The owner(s) or operator(s) of a vapor collection system shall:
 - (i) Operate the vapor collection system and the gasoline loading equipment during all loadings and unloadings of transport tanks equipped for emission control such that:
 - (A) A gauge reading of tank pressure will not exceed 4.5 kilopascals (18 inches of water) or vacuum 1.5 kilopascals (6 inches of water);
 - (B) The concentration of gasoline vapors is below the lower explosive limit (LEL, measured as propane) at all points a distance of 2.5 cm (1 inch) from potential leak sources when measured by the method in SWCAA 490-202(3); and
 - (C) There are no visible liquid leaks.
 - (ii) Repair and retest a vapor collection system that exceeds the limits of SWCAA 490-202 (2)(d)(i) within fifteen days.
- (e) SWCAA may, at any time, monitor a gasoline transport tank and vapor collection system during loading or unloading operations by the procedure in SWCAA 490-202 (3)(d) to confirm continuing compliance with SWCAA 490-202 (2)(b) or (d).
- (f) SWCAA may, at any time, require that a cargo tank be tested for leak detection, pressure decay, or vapor tightness using the procedures identified in 40 CFR

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63.425(f), (g), and (h). The allowable pressure change for testing under 40 CFR 425 (g) and (h) shall be as provided in column three of the table in 2(b) of this section.

(3) Testing and monitoring.

- (a) The owner(s) or operator(s) of a gasoline transport tank or vapor collection system shall, at his own expense, demonstrate compliance with SWCAA 490-202 (2)(a) and (b), respectively. All tests shall be made by, or under the direction of, a person qualified to perform the tests. Persons or companies performing the testing shall be approved by SWCAA. Persons or companies performing testing shall submit a copy of their test procedures and test equipment calibration procedures to SWCAA for review and approval for initial qualification. SWCAA may request calibration and test procedures as necessary to assure continued proper test protocol.
- (b) Certification testing shall be performed annually and the certification sticker shall be replaced annually. Certification testing shall be performed no later than the expiration date on the sticker and no sooner than 30 days prior to the expiration date. Renewals shall be made for a period of one year from the previous expiration date. Expiration dates shall initially be established by SWCAA based on a successful certification test. The expiration date may be requested to be adjusted by an owner or operator but, if adjusted, shall not exceed one year from the date of the last valid certification test.
- (c) Compliance shall be demonstrated for each required test by the following methods:

TEST TYPE	METHOD
Annual certification (40 CFR 63.425(e))	EPA Method 27
Leak detection test (40 CFR 63.425(f))	EPA Method 21
Nitrogen pressure decay field test (40 CFR 63.425(g))	See 40 CFR 63.425(g)
Continuous performance pressure decay (40 CFR 63.425(h))	EPA Method 27
- (d) Monitoring to confirm the continuing existence of leak tight conditions shall be consistent with the procedures in SWCAA 490-202 (3)(c).

(4) Recordkeeping.

- (a) The owner(s) or operator(s) of a gasoline transport tank or vapor collection system shall maintain records of all certification tests and repairs for at least two years after the test or repair is completed.
- (b) The records of certification tests required by SWCAA 490-202 (4)(a) shall, as a minimum, contain:
 - (i) The transport tank identification number and tank capacity;
 - (ii) The initial test pressure and the time of the reading;
 - (iii) The final test pressure and the time of the reading;
 - (iv) The initial test vacuum and the time of the reading;
 - (v) The final test vacuum and the time of the reading;
 - (vi) At the top of each report page, the company name, date and location of the tests on that page; and
 - (vii) Name, signature, and title of the person conducting the test.
- (c) The owner(s) or operator(s) of a gasoline transport tank shall annually certify that the transport tank passed the required tests.
- (d) Each owner or operator of a gasoline transport tank shall pay a fee and register annually for each gasoline transport tank as provided in SWCAA 400-100 (3). The registration fee is due at the time of initial certification and subsequently at the time of annual certification renewal.

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- (e) Copies of all records required under SWCAA 490-202 shall immediately be made available to SWCAA, upon written request, at any reasonable time.

SWCAA 490-203 Perchloroethylene Dry Cleaning Systems

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

- (1) Specific applicability. This section shall apply to all dry cleaning systems using perchloroethylene cleaning solvent and as qualified in SWCAA 490-203 (1)(a) and (b) and 490-025.
 - (a) The following dry cleaning systems are exempt from the requirements of SWCAA 490-203 (2)(a)(i) and (ii):
 - (i) Coin-operated systems;
 - (ii) Systems located in a facility with inadequate space to accommodate an adsorber;
 - (iii) Systems with insufficient steam capacity to desorb adsorbers.
 - (b) An exemption for the conditions stated in SWCAA 490-203 (2)(a)(i) and (ii) may be granted by SWCAA when sufficient evidence is submitted by the owner(s) or operator(s) of the dry cleaning system to justify the exemption.
 - (c) A material balance will be used to determine VOC losses.
- (2) Provisions for specific processes.
 - (a) The owner(s) or operator(s) of a perchloroethylene dry cleaning facility subject to this regulation shall:
 - (i) Vent the entire dryer exhaust through a properly functioning carbon adsorption system or equally effective control device;
 - (ii) Emit no more than 100 ppmv when demonstrated in accordance with SWCAA 490-203 (3)(c)(i), of VOCs from the dryer control device before dilution;
 - (iii) Immediately repair all components found to be leaking liquid VOCs;
 - (iv) Cook or treat all diatomaceous earth filters so that the residue contains 25 kg or less of VOCs per 100 kg of wet waste material;
 - (v) Reduce the VOCs from all solvent stills to 60 kg or less per 100 kg of wet waste material;
 - (vi) Drain all filtration cartridges, in the filter housing or other enclosed container, for at least twenty-four hours before discarding the cartridges; and
 - (vii) When possible, dry all drained cartridges without emitting VOCs to the atmosphere.
- (3) Testing and monitoring.
 - (a) Compliance with SWCAA 490-203 (2)(a)(i), (vi), and (vii) shall be determined by means of visual inspection.
 - (b) Compliance with SWCAA 490-203 (2)(a)(iii) shall be determined by means of visual inspection of the following components:
 - (i) Hose connections, unions, couplings and valves;
 - (ii) Machine door gaskets and seatings;
 - (iii) Filter head gasket and seating;
 - (iv) Pumps;

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- (v) Base tanks and storage containers;
 - (vi) Water separators;
 - (vii) Filter sludge recovery;
 - (viii) Distillation unit;
 - (ix) Diverter valves;
 - (x) Saturated lint from lint basket; and
 - (xi) Cartridge filters.
- (c) Compliance with SWCAA 490-203 (2)(a)(ii) shall be demonstrated by:
- (i) A test consistent with the procedures on file with and approved by SWCAA; or
 - (ii) The proper installation, operation, and maintenance of equipment that has been demonstrated by the owner(s) or operator(s) to adequately meet the emission limits in SWCAA 490-203 (2)(a)(ii).
- (d) Compliance with SWCAA 490-203 (2)(a)(iv) and (v) shall be demonstrated by tests consistent with the procedures on file with and approved by SWCAA.

SWCAA 490-204 Graphic Arts Systems

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

- (1) Specific applicability.
- (a) This section shall apply to all packaging rotogravure, publication rotogravure, specialty printing operations, and flexographic printing facilities that use more than 90 megagrams (100 tons) per year of VOCs as a component of ink, for the thinning of ink, cleaning of presses, press components and equipment; and are covered by SWCAA 490-025.
 - (b) Machines that have both coating units (apply a uniform layer of material across the entire width of a web) and printing units (forming words, designs, and pictures) shall be included under SWCAA 490-204 rather than SWCAA 490-040(6), Surface Coaters.
- (2) Provisions for specific processes.
- (a) No owner(s) or operator(s) of a packaging rotogravure, publication rotogravure or flexographic printing subject to this regulation and employing solvent containing ink may operate, cause, allow or permit the operation of the facility unless:
 - (i) The volatile fraction of ink, as it is applied to the substrate, contains twenty-five percent by volume or less of organic solvent and seventy-five percent by volume or more of water;
 - (ii) The ink as it is applied to the substrate, less water, contains sixty percent by volume or more nonvolatile material; or
 - (iii) The owner(s) or operator(s) installs and operates a system that captures at least ninety percent by weight and:
 - (A) A carbon adsorption system that reduces the volatile organic emissions from the capture system by at least ninety percent by weight;

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- (B) An incineration system that oxidizes at least ninety percent of the nonmethane VOCs (VOC measured as total combustible carbon) to carbon dioxide and water; or
 - (C) An alternative VOC emission reduction system demonstrated to have at least a ninety percent reduction efficiency, measured across the control system, and has been approved by SWCAA.
- (b) A collection system shall be used with the emission controls of SWCAA 490-204 (2)(a)(iii). The design and operation of the collection system shall be consistent with good engineering practice, and shall provide an overall reduction in the emission of VOCs of at least:
- (i) Seventy-five percent where a publication rotogravure process is used; or
 - (ii) Sixty-five percent where a packaging rotogravure process is used; or
 - (iii) Sixty percent where a flexographic process is used.
- (3) Testing and monitoring.
- (a) To demonstrate compliance with this regulation, refer to SWCAA 400-105.
 - (b) When add-on control equipment is used, continuous monitors of the following parameters shall be installed, periodically calibrated, and operated at all times that the associated control equipment is operating:
 - (i) Exhaust gas temperature of all incinerators;
 - (ii) Temperature rise across a catalytic incinerator bed;
 - (iii) Breakthrough of VOC on a carbon adsorption unit; and
 - (iv) Any other continuous monitoring or recording device required by SWCAA.
 - (c) The owner or operator of a facility shall be responsible for all expenses of monitoring required by SWCAA 490-204 (3)(b).

SWCAA 490-205 Surface Coating of Miscellaneous Metal Parts and Products

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

- (1) Specific applicability. This section shall apply to surface coating of miscellaneous metal parts and products in the following industries, if the potential uncontrolled emissions of VOC is greater than 10 tons per year and as qualified in SWCAA 490-205 (1)(b), (c), and (d), and 490-025.
- (a) Miscellaneous metal parts and products shall include:
 - (i) Large farm machinery (harvesting, fertilizing and planting machines, tractors, combines, etc.);
 - (ii) Small farm machinery (lawn and garden tractors, lawn mowers, rototillers, etc.);
 - (iii) Small appliances (fans, mixers, blenders, crock pots, dehumidifiers, vacuum cleaners, etc.);
 - (iv) Commercial machinery (office equipment, computers and auxiliary equipment, typewriters, calculators, vending machines, etc.);
 - (v) Industrial machinery (pumps, compressors, conveyor components, fans, blowers, transformers, etc.);
 - (vi) Fabricated metal products (metal covered doors, frames, etc.); and

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- (vii) Any other industrial category that 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 (nonelectric machinery), Major Group 36 (electrical machinery), Major Group 37 (transportation equipment), Major Group 38 (miscellaneous instruments), Major Group 39 (miscellaneous manufacturing industries), Major Group 40 (railroad transportation), and Major Group 41 (transit passenger transportation).
 - (b) This section is not applicable to the surface coating of the following metal parts and products:
 - (i) Automobiles and light-duty trucks;
 - (ii) Metal cans;
 - (iii) Flat metal sheets and strips in the form of rolls or coils;
 - (iv) Magnet wire for use in electrical machinery;
 - (v) Metal furniture;
 - (vi) Large appliances;
 - (vii) Airplanes;
 - (viii) Automobile refinishing;
 - (ix) Customized top coating of automobiles and trucks, if production is less than thirty-five vehicles per day; and
 - (x) Exterior of marine vessels.
 - (c) This regulation applies to the application area, flashoff area, air and forced air drier, and oven used in the surface coating of the metal parts and products in SWCAA 490-205 (1)(a). This regulation also applies to prime coat, top coat, and single coat operations.
 - (d) The application of coatings whose formulations are controlled by federal specifications and the use of which is required by federal agencies shall be exempt from the emission limits in SWCAA 490-205 (2)(a).
 - (e) A case-by-case determination of the emission controls best representing RACT may be substituted for the requirements of SWCAA 490-205(2). Such a determination shall be approved by SWCAA.
- (2) Provisions for specific processes.
- (a) The owner or operator of a coating application system shall not emit a quantity of VOCs greater than those listed by specific coating, excluding water and as delivered to the application system:

(i) Clear coatings	0.52 kg/liter	(4.3 lb/gallon)
(ii) Extreme performance coatings	0.42 kg/liter	(3.5 lb/gallon)
(iii) Air dried coatings	0.42 kg/liter	(3.5 lb/gallon)
(iv) All others	0.36 kg/liter	(3.0 lb/gallon)
(v) Powder coatings	0.05 kg/liter	(0.4 lb/gallon)
 - (b) When more than one emission limitation listed in SWCAA 490-205 (2)(a) applies to a specific coating, the least stringent will apply.
 - (c) All VOC emissions from solvent washings shall be considered in the emission limitations in SWCAA 490-205 (2)(a), unless the solvent is directed into containers that prevent evaporation into the atmosphere.
 - (d) The emission limits set forth in SWCAA 490-205 (2)(a) shall be achieved by:

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- (i) The application of low solvent coating technology; or
 - (ii) An incineration system that oxidizes at least ninety percent of the VOCs (VOC measured as total combustible carbon) to carbon dioxide and water; or
 - (iii) An equivalent means of VOC reduction certified by the owner(s) or operator(s) and approved by SWCAA.
- (e) A collection system shall be used together with the incinerator of SWCAA 490-205 (2)(d)(ii). The design and operation of the collection system shall be consistent with good engineering practice and provide for an overall VOC emission reduction necessary to comply with the emission limits of SWCAA 490-205 (2)(a). The required VOC emission reduction shall be calculated on a unit volume of uncured solids basis.
- (3) Testing and monitoring.
- (a) SWCAA may require the owner(s) or operator(s) of a source to demonstrate at his/her own expense, compliance by the methods of SWCAA 490-205 (3)(c).
 - (b) The owner(s) or operator(s) of a source shall notify SWCAA at least ten days before a proposed emission certification test so the director or a representative may observe the test.
 - (c) To demonstrate compliance with this regulation, refer to SWCAA 400-105.
 - (d) SWCAA may require monitoring of the following parameters:
 - (i) Exhaust gas temperature of all incinerators;
 - (ii) Temperature rise across a catalytic incinerator bed; and
 - (iii) Breakthrough of VOC on a carbon adsorption unit.

SWCAA 490-207 Surface Coating of Flatwood Paneling

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

- (1) Specific applicability.
- (a) This section shall apply to all flatwood panel manufacturers and surface finishing facilities as qualified in SWCAA 490-207 (1)(b) and (c) and 490-025.
 - (b) These regulations shall apply to all operations and equipment that is used to apply, convey and dry (including flashoff areas) a surface pattern or coating on the following products:
 - (i) Printed interior panels made of hardwood plywood and thin particleboard;
 - (ii) Natural finish hardwood plywood panels; or
 - (iii) Hardboard paneling with Class II finishes.
 - (c) These regulations do not apply to the manufacture of exterior siding, tileboard, or particleboard used as a furniture component.
- (2) Provisions for specific processes.
- (a) The owner(s) or operator(s) of a facility shall not emit VOCs from a coating application system in excess of:
 - (i) 2.9 kg per 100 square meters of coated finished product (6.0 lb/1,000 square feet) from printed interior panels, regardless of the number of coats applied;
 - (ii) 5.9 kg per 100 square meters of coated finished product (12.0 lb/1,000 square feet) from natural finish hardwood plywood panels, regardless of the number of coats applied; and

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- (iii) 4.9 kg per 100 square meters of coated finished product (10.0 lb/1,000 square feet) from Class II finishes on hardboard panels, regardless of the number of coats applied.
 - (b) The emission limits in SWCAA 490-207 (2)(a) shall be achieved by:
 - (i) The application of low solvent content coating technology; or
 - (ii) An incineration system that oxidizes at least ninety percent of the nonmethane VOCs entering the incinerator (VOC measured as total combustible carbon) to carbon dioxide and water; or
 - (iii) An equivalent means of VOC removal. The equivalent means must be certified by the owner(s) or operator(s) and approved by SWCAA.
 - (c) A capture system shall be used in conjunction with the emission control systems in SWCAA 490-207 (2)(b)(ii) and (iii). The design and operation of the capture system must be consistent with good engineering practice and shall be required to provide for an overall emission reduction sufficient to meet the emission limitation in SWCAA 490-207 (2)(a).
- (3) Testing and monitoring.
 - (a) SWCAA may require the owner or operator of a facility to demonstrate at his/her own expense compliance by the methods of SWCAA 490-207 (3)(c).
 - (b) The owner(s) or operator(s) of a facility shall notify SWCAA at least ten days before a proposed emission certification test so the director or a representative may observe the test.
 - (c) To demonstrate compliance with this regulation, refer to SWCAA 400-105.
 - (d) SWCAA may require monitoring of the following parameters:
 - (i) Exhaust gas temperature of all incinerators;
 - (ii) Temperature rise across a catalytic incinerator bed; and
 - (iii) Breakthrough of VOC on a carbon adsorption unit.

SWCAA 490-208 Aerospace Assembly and Component Coating Operations

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 93-16-011 filed 7/22/93, effective 8/22/93; WSR 01-05-066 filed 2/15/01, effective 3/18/01]

- (1) Specific applicability. This section shall apply to all aerospace component coating facilities that emit an annual average of eighteen kilograms (forty pounds) or more of VOCs per operating day and as qualified in SWCAA 490-025.
- (2) It shall be unlawful for any person to cause or allow:
 - (a) The application of any primer or topcoat to aerospace components that contains in excess of:
 - (i) 650 grams of VOC per liter of primer, less water, as applied.
 - (ii) 600 grams of VOC per liter of topcoat, less water, as applied.
 - (b) The application of any temporary protective coating to aerospace components that contains more than 250 grams of VOC per liter of material, less water, as applied.
 - (c) The use of VOCs of composite vapor pressure of 10.4 kPa (1.5 psia) or greater at a temperature of 21.1°C (70°F) for surface preparation or cleanup, excluding paint removal.

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- (d) The use of VOCs for the cleanup of spray equipment used in aerospace component coating operations unless 85 percent of the VOCs by weight, are collected and disposed so that they are not emitted to the atmosphere.
- (e) The use of a stripper that contains more than 400 grams of VOC per liter or has a composite vapor pressure of VOCs more than 1.3 kPa (0.19 psia) at 21.1°C (70°F).
- (3) The emission limits of paragraph (2) shall be achieved by:
 - (a) The application of reasonably available low solvent coating technology;
 - (b) A vapor collection and disposal system; or
 - (c) An equivalent method of VOC reduction certified by the owner(s) or operator(s) and approved by SWCAA.
- (4) The provisions of SWCAA 490-208 (2)(a) and (2)(b) shall not apply to the following materials:
 - (a) Coatings for masking in chemical etching operations,
 - (b) Adhesive bonding primer,
 - (c) Flight test coatings,
 - (d) Space vehicle coatings, or
 - (e) Fuel tank coatings.
- (5) Upon the submission of an alternative coating evaluation, SWCAA may determine that a reasonably available low solvent coating does exist for a given application and may exempt the coating from requirements of SWCAA 490-208. All alternative coating evaluations shall contain, as a minimum:
 - (a) Types of products to be coated,
 - (b) Types of coatings evaluated,
 - (c) Results of performance tests,
 - (d) Status of research into development of low VOC coatings for the application,
 - (e) Feasibility of installing control equipment,
 - (f) Mitigating measures that could be implemented to reduce VOC emissions.