

YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

**RULE 9.7 - PERCHLOROETHYLENE DRY CLEANING OPERATIONS**

*(Adopted March 23, 1994)*

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## **100 GENERAL**

101 **PURPOSE:** The purpose of this rule is to control the emissions of perchloroethylene from dry cleaning operations in compliance with the Airborne Toxics Control Measure adopted by the California Air Resources Board (Title 17 and Title 26, California Code of Regulations, Section 93109).

102 **APPLICABILITY:** Any person who owns or operates perchloroethylene dry cleaning equipment shall comply with this rule.

110 **EXEMPTION - NOTIFICATION:** A facility is exempted from the requirements of Section 401.1 providing that the District possesses current equivalent information on that facility.

## **200 DEFINITIONS**

201 **ADSORPTIVE CARTRIDGE FILTER:** A replaceable cartridge filter that contains diatomaceous earth or activated clay as the filter medium.

202 **CARTRIDGE FILTER:** A replaceable cartridge filter that contains one of the following as the filter medium: Paper, activated carbon, or paper and activated carbon. A cartridge filter contains no diatomaceous earth or activated clay. Cartridge filters include, but are not limited to: Standard filters, split filters, "jumbo" filters, and all carbon polishing filters.

**203 CLOSED-LOOP MACHINE:** Dry cleaning equipment in which washing, extraction, and drying are all performed in the same single unit (also known as dry-to-dry) and which recirculates perchloroethylene-laden vapor through a primary control system with no exhaust to the atmosphere during the drying cycle. A closed-loop machine may allow for venting to the ambient air through a fugitive control system after the drying cycle is complete and only while the machine door is open.

**204 CO-LOCATED WITH A RESIDENCE:** Sharing a common wall,,floor, or ceiling with a residence. For the purposes of this definition, "residence" means any dwelling or housing which is owned, rented, or occupied by the same person for a period of 180 days or more, excluding short-term housing such as a motel or hotel room rented and occupied by the same person for a period of less than 180 days.

**205 CONVERTED MACHINE:** An existing vented machine that has been modified to be a closed-loop machine by eliminating the aeration step, installing a primary control system, and providing for recirculation of the perchloroethylene-laden vapor with no exhaust to the atmosphere or workroom during the drying cycle. A converted machine may allow for venting to the ambient air through a fugitive control system after the drying cycle is complete and only while the machine door is open.

**206 COOL-DOWN:** The portion of the drying cycle that begins when the heating mechanism deactivates and the refrigerated condenser continues to reduce the temperature of the air recirculating through the drum to reduce the concentration of perchloroethylene in the drum.

**207 DATE OF COMPLIANCE:** The time, in months, from the District's adoption of this rule until a facility must be in compliance with the specific requirements of this rule.

**208 DESORPTION:** Regeneration of an activated carbon bed, or any other type of vapor adsorbent system by removal of the adsorbed solvent using hot air, steam, or other means.

**209 DIP TANK OPERATION:** The immersion of materials in a solution that contains perchloroethylene, for purposes other than dry cleaning, in a tank or container that is separate from the dry cleaning equipment.

**210 DRUM:** The rotating cylinder or wheel of the dry cleaning machine that holds the material being cleaned.

**211 DRY CLEANING EQUIPMENT:** Any machine, device, or apparatus used to dry clean materials with perchloroethylene or to remove residual perchloroethylene from previously cleaned materials. Dry cleaning equipment may include, but is not limited to, a transfer machine, a vented machine, a converted machine, a closed-loop machine, a reclaimer, or a drying cabinet.

**212 DRY CLEANING SYSTEM:** All of the following equipment devices, or apparatus associated with the perchloroethylene dry cleaning process:

212.1 Dry cleaning equipment;

212.2 Filter or purification systems;

212.3 Waste holding, treatment or disposal systems;

212.4 Perchloroethylene supply systems;

212.5 Dip tanks;

212.6 Pumps;

212.7 Gaskets;

212.8 Piping, ducting, fittings, valves, or flanges that convey perchloroethylene-contaminated air; and

212.9 Control systems.

**213 DRYING CABINET:** A housing in which materials previously cleaned with perchloroethylene are placed to dry and which is used only to dry materials that otherwise be damaged by the heat and tumbling action of the drying cycle.

**214 DRYING CYCLE:** The process used to actively remove the perchloroethylene remaining in materials after washing and extraction. For closed-loop machines, the heated portion of the cycle is followed by a cool-down and may be extended beyond cool-down by the activation of a control system. The drying cycle begins when heating coils are activated and ends when the machine ceases rotation of the drum.

**215 ENVIRONMENTAL TRAINING PROGRAM:** An initial course or a refresher course of the environmental training program for perchloroethylene dry cleaning operations that has been authorized by the Air Resources Board according to the requirements of 17 CCR, Section 93110.

**216 EQUIVALENT CLOSED-LOOP VAPOR RECOVERY SYSTEM:** A device or combination of devices that achieves, in practice, a perchloroethylene recovery performance equal to or exceeding that of refrigerated condensers.

**217 EXISTING FACILITY:** Any facility that operated dry cleaning equipment prior to the effective date of this Rule. Facility relocations within the District shall be considered existing facilities for the purposes of this Rule.

**218 FACILITY:** Any entity or entities which: own or operate perchloroethylene dry cleaning equipment, are owned or operated by the same person or persons, and are located on the same parcel or contiguous parcels.

**219 FACILITY MILEAGE:** The efficiency of perchloroethylene use at a facility, expressed as the pounds of materials cleaned per gallon of perchloroethylene used, and calculated for all dry cleaning machines at the facility over a specified period.

**220 FUGITIVE CONTROL SYSTEM:** A device or apparatus that collects fugitive perchloroethylene vapors from the machine door, button and lint traps, still, or other intentional openings of the dry cleaning system and routes those vapors to a device that reduces the mass of perchloroethylene prior to exhaust of the vapor to the atmosphere.

**221 FULL-TIME EMPLOYEE:** Any person who is employed at the dry cleaning facility and averages at least 30 hours per week in any 90-day period.

**222 GALLONS OF PERCHLOROETHYLENE USED:** The volume of perchloroethylene, in gallons, introduced into the dry cleaning equipment, and not recovered at the facility for reuse on-site in the dry cleaning equipment, over a specified time period.

**223 HALOGENATED-HYDROCARBON DETECTOR:** A portable device capable of detecting vapor concentrations of perchloroethylene of 25 ppmv or less and indicating an increasing concentration by emitting an audible signal or visual indicator that varies as the concentration changes.

**224 LIQUID LEAK:** A leak of liquid containing perchloroethylene of more than 1 drop every 3 minutes.

**225 MATERIALS:** Wearing apparel, linens, fabrics, textiles, rugs, leather, and other goods that are dry cleaned.

**226 MUCK COOKER:** A device for heating perchloroethylene-laden waste material to volatilize and recover perchloroethylene.

**227 NEW FACILITY:** A facility that did not operate any dry cleaning equipment prior to the effective date of this rule. Facility relocations within the District shall not be considered new facilities for the purposes of this rule.

**228 PERCEPTIBLE VAPOR LEAK:** An emission of perchloroethylene vapor from unintended openings in the dry cleaning system, as indicated by the odor of perchloroethylene or the detection of gas flow by passing the fingers over the surface of the system. This definition shall apply only for the interim period until August 23, 1995.

**229 PERCHLOROETHYLENE (PERC):** The substance with the chemical formula  $C_2Cl_4$ , also known by the name tetrachloroethylene, which has been identified by the Air Resources Board and listed as a toxic air contaminant in 17 CCR, Section 93000.

**230 PERCHLOROETHYLENE DRY CLEANING ("DRY CLEANING"):** The process used to remove soil, greases, paints, and other unwanted substances from materials with perchloroethylene.

**231 POUNDS OF MATERIAL CLEANED PER LOAD:** The total dry weight, in pounds, of the materials in each load dry cleaned at the facility, as determined by weighing each load on a scale prior to dry cleaning and recording the value.

**232 PRIMARY CONTROL SYSTEM:** A refrigerated condenser, or an equivalent closed-loop vapor recovery system approved by the Air Pollution Control Officer.

**233 RECLAIMER:** A machine, device, or apparatus used only to remove residual perchloroethylene from materials that have been previously dry cleaned in a separate piece of dry cleaning equipment.

**234 REASONABLY AVAILABLE:** As applied to an initial course for the environmental training program, is such a course offered within 200 miles of the District boundaries and that all such courses have a capacity, in the aggregate, that is adequate to accommodate at least one person from each facility in the District required to certify a trained operator at that time.

**235 REFRIGERATED CONDENSER:** A closed-loop vapor recovery system into which perchloroethylene vapors are introduced and trapped by cooling below the dew point of the perchloroethylene.

**236 SECONDARY CONTROL SYSTEM:** A device or apparatus that reduces the concentration of perchloroethylene in the recirculating air at the end of the drying cycle beyond the level achievable with a refrigerated condenser alone. An "integral" secondary control system is designed and offered as an integral part of a production package with a single make and model of dry cleaning machine and primary control system. An "add-on" secondary control system is designed or offered as a separate retrofit system for use on multiple machine makes and models.

**237 SELF-SERVICE DRY CLEANING MACHINE:** A perchloroethylene dry cleaning machine that is loaded, activated, or unloaded by the customer.

**238 SEPARATOR:** Any device used to recover perchloroethylene from a water-perchloroethylene mixture.

**239 STILL:** A device used to volatilize and recover perchloroethylene from contaminated solvent removed from the cleaned materials.

**240 TRAINED OPERATOR:** The owner, the operator, or an employee of the facility, who holds a certificate of completion of the initial course of an environmental training program and maintains his/her status by successfully completing the associated refresher courses as required.

**241 TRANSFER MACHINE:** A combination of perchloroethylene dry cleaning equipment in which washing and extraction are performed in one unit and drying is performed in a separate unit.

**242 VAPOR ADSORBER:** A bed of activated carbon or other adsorbent into which perchloroethylene vapors are introduced and trapped for subsequent desorption.

**243 VAPOR LEAK:** A emission of perchloroethylene vapor from unintended openings in the dry cleaning system. A vapor leak is indicated by a rapid audible signal or visual signal from a halogenated-hydrocarbon detector or a concentration of perchloroethylene exceeding 50 ppmv as methane as indicated by a portable analyzer. This definition shall become applicable on August 23, 1995.

**244 VENTED MACHINE:** Dry cleaning equipment in which washing, extraction, and drying are all performed in the same single unit and in which fresh air is introduced into the drum in the last step of the drying cycle and exhausted to the atmosphere, either directly or through a control device.

**245 WASTE WATER EVAPORATOR:** A device that vaporizes perchloroethylene-contaminated waste water through the addition of thermal or chemical energy, or through physical action.

**246 WATER-REPELLING OPERATIONS:** The treatment of materials with a water-repellant solution that contains perchloroethylene.

### **300 STANDARDS**

**301 EQUIPMENT REQUIREMENTS:** The owner/operator shall not operate dry cleaning equipment after the applicable date shown in Column G of **Table 1**, unless the following requirements are met:

**301.1 Prohibited Equipment:** The owner/operator shall not operate any of the following types of perchloroethylene dry cleaning equipment after the applicable date shown in Column G of **Table 1**:

- a. A transfer machine system, including any reclaimer or other device in which materials that have been previously dry cleaned with perchloroethylene are placed to dry, except a drying cabinet that meets the requirements of Section 301.4.a.;
- b. A vented machine; or
- c. A self-service dry cleaning machine.

**301.2 Required Equipment:** The owner or operator of each new or existing facility shall meet the applicable requirements of **Table 1** as follows:

- a. For an existing facility:
  - i. Within 12 months of the effective date of this Rule, choose either Option 1 or Option 2 of **Table 1** and notify the District of his/her choice.
  - ii. Comply with the requirements of Option 2, notwithstanding his/her choice of Option 1, if the facility does not meet the applicable requirements for Option 1 prior to August 23, 1995.
  - iii. Install, operate, and maintain the required equipment for the option chosen, as shown in column A of **Table 1** for existing facilities.
- b. A new facility shall install, operate, and maintain the required equipment shown in Columns A of **Table 1** for new facilities. The applicable requirements shall be determined based on the date the facility commences operation of the dry cleaning equipment.

**301.3 Specifications for Required Equipment:** Required equipment shall meet the following specifications:

- a. A primary control system shall:
  - i. Operate during both the heated and cool-down phases of the drying cycle to reduce the mass of perchloroethylene in the recirculating air stream.
  - ii. Not exhaust to the atmosphere or workroom.
  - iii. Not require the addition of any form of water to the primary control system that results in physical contact between the water and perchloroethylene.
  - iv. For refrigerated condensers only:
    - a. Be capable of achieving an outlet vapor temperature, downstream of any bypass, of less than or equal to 45°F (7.2°C) during cool-down; and
    - b. Have a graduated thermometer with a minimum range from 0°F (-18°C) to 150°F (66°C), which measures the temperature of the outlet vapor stream, downstream of any bypass of the condenser, and is easily visible to the operator.
  - v. For equivalent closed-loop vapor recovery systems:
    - a. Use a technology that has been demonstrated, pursuant to the requirement of Section 502, to achieve a perchloroethylene concentration of 8,600 ppmv or less in each test.
    - b. Have a device that measures the perchloroethylene concentration, or a demonstrated surrogate parameter, in the drum at the end of each



drying cycle, before the machine door is opened and any fugitive control system activates, and indicates if the concentration is above or below 8,600 ppmv. This device shall be installed such that the reading is easily visible to the operator.

- b. A converted machine shall meet all the following requirements, as demonstrated on-site, either on conversion or prior to compliance with the requirements of Section 301.2.a.:
  - i. All process vents that exhaust to the atmosphere or workroom during washing, extraction, or drying shall be sealed.
  - ii. The converted machine shall use an appropriately-sized primary control system to recover perchloroethylene vapor during the heated and cool-down phases of the drying cycle.
    - a. A refrigerated condenser shall be considered appropriately sized, for a machine converted on or after the effective date of this Rule, if all the following conditions are met:
      - 1. The water-cooled condensing coils are replaced with refrigerant-cooled condensing coils.
      - 2. The compressor of the refrigerated condenser shall have a capacity, in horsepower (hp) that is no less than the minimum capacity, determined as follows:

$$\text{Minimum Capacity} \\ = \frac{\text{of the}}{\text{Machine}} \\ \text{(lbs)}$$

Capacity  
(hp) 12

- 3. A refrigerated condenser shall be considered appropriately sized, for a machine converted prior to the effective date of this Rule, if one of the following conditions are met:
  - 1. The refrigerated condenser shall meet the specifications for new conversions in Section 301.3.b.(ii)(a); or
  - 2. The refrigerated condenser shall achieve, and maintain for 3 minutes, an outlet vapor temperature, measured downstream of the condenser and any bypass of the condenser, of less than or equal to 45°F (7.2°C) within 10 minutes of the initiation of cool-down.
- 4. An equivalent closed-loop vapor recovery system shall be appropriately sized for the conversion of a vented machine if the system does not extend the total drying time by more than 5 minutes to meet the specifications of Section 301.3.a.(v).

- b. The converted machine shall operate with no liquid leaks and no vapor leaks. Any seal, gasket, or connection determined to have a liquid leak or vapor leak shall be replaced.
- iii. A secondary control system shall:
  - i. Be designed to function with a primary control system or be designed to function as a combined primary and secondary control system that meets all of the applicable requirements of this Section.
  - ii. Not exhaust to the atmosphere or workroom.
  - iii. Not require the addition of any form of water to the secondary control system that results in physical contact between the water and perchloroethylene.
  - iv. Use a technology that has been demonstrated, pursuant to the requirements of Section 502, to achieve a perchloroethylene concentration in the drum of 300 ppmv or less in each test.
  - v. Have a holding capacity equal to or greater than 200 percent of the maximum quantity of perchloroethylene vapor expected in the drum prior to activation of the system.
  - vi. For add-on secondary control systems only, the system shall be sized and capable of reducing the perchloroethylene concentration in the drum from 8,600 ppmv or greater to 300 ppmv or less in the maximum volume of recirculating air in the dry cleaning machine and all contiguous piping.

**301.4 Specifications for Other Equipment:** A drying cabinet shall:

- a. Be fully enclosed; and
- b. Be exhausted via one of the following methods:
  - i. To a control system that has been demonstrated, pursuant to the requirements of Section 502, to achieve a perchloroethylene concentration of 100 ppmv or less in each test, measured at the outlet without dilution.
  - ii. To a control system that reduces the concentration of perchloroethylene in a closed system with no exhaust to the atmosphere or workroom.

**TABLE 1**

**EQUIPMENT REQUIREMENTS - DATES OF COMPLIANCE**

	COLUMN A	COLUMN B	COLUMN C	COLUMN D	COLUMN E	COLUMN F	COLUMN G	COLUMN H
<b>FACILITY COMPLIANCE</b>								
<b>TYPE</b>								
<b>OPTIONS</b>	Required Dry Cleaning Equipment	Initial Notifica- tion	Record- keeping	Annual Reporting	Leak Check and Repair, Operation and	Environmen- tal Training Require- ments	Equipment Require- ments	Water- repelling and Dip Tank

						Maintenance Require- ments			Require- ments
EXISTING FACILITIES	Option 1,	Converted Closed-Loop Machine with a Primary Control System	May 22, 1994	May 22, 1994	Per Section 403	May 22, 1994	August 23, 1995	August 23, 1995	August 23, 1995
	OR								
	Option 2	Closed-Loop Machine with a Primary Control System	May 22, 1994	May 22, 1994	Per Section 403	May 22, 1994	August 23, 1995	March 23, 1998	August 23, 1995
NEW FACILITIES	Commencing Operation Prior to August 23, 1995	Closed-Loop Machine with a Primary Control System	On Application for a Permit	Upon Commence- ment of Operation	Per Section 403	Upon Commence- ment of Operation	3 Months Following Commence- ment of Operation	Upon Commence- ment of Operation	Upon Commence- ment of Operation
	Commencing Operation On or After August 23, 1995	Closed-Loop Machine with a Primary Control System and a Secondary Control System	On Application for a Permit	Upon Commence- ment of Operation	Per Section 403	Upon Commence- ment of Operation	3 Months Following Commence- ment of Operation	Upon Commence- ment of Operation	Upon Commence- ment of Operation

**302 GOOD OPERATING PRACTICES:** The owner/operator shall not operate dry cleaning equipment after the applicable date shown in Column E and Column F of **Table 1**, unless all of the following requirements are met:

**302.1 Operation and Maintenance Requirements:** The trained operator, or his/her designee, shall operate and maintain all components of the dry cleaning system in accordance with the requirements of this Section and the conditions specified in the facility's Permit to Operate beginning on the applicable date specified in Column E of **Table 1**. For operations not specifically addressed, the components shall be operated and maintained in accordance with the manufacturer's recommendations. The District shall provide an operation and maintenance checklist to the facility. Each operation function and the date performed shall be recorded on the checklist. The operation and maintenance checklist provided by the District shall include, at a minimum, the following requirements:

- a. Refrigerated condensers shall be operated to ensure that exhaust gases are recirculated until the air-vapor stream temperature at the outlet side of the refrigerated condenser, downstream of any bypass, is less than or equal to 45°F (7.2°C).
- b. Primary control systems, other than refrigerated condensers, shall be operated to ensure that exhaust gases are recirculated until the perchloroethylene concentration in the drum is less than or equal to 8,600 ppmv at the end of the drying cycle, before the machine door is opened and any fugitive control system activates.
- c. Vapor adsorbers used as a primary control system or secondary control system shall be operated to ensure that exhaust gases are recirculated at the temperature specified by the District, based on manufacturer's recommendations for optimum adsorption. These vapor adsorbers shall be desorbed according to the conditions specified by the District in the facility's Permit to Operate, including a requirement that no perchloroethylene vapors shall be routed to the atmosphere during routine operation or desorption.
- d. During the interim period between compliance with this Section and compliance with the requirements of Section 301, an existing facility with a transfer machine or a vented machine shall operate any existing carbon adsorber, which functions during the drying cycle, to meet the following requirements:
  - i. Desorption shall be performed each time all dry cleaning equipment exhausted to the device has cleaned a total of three pounds of materials for each pound of activated carbon. Desorption shall be performed with the minimum steam pressure and air flow capacity specified by the District.
  - ii. Once desorption is complete, the carbon bed shall be fully dried according to the manufacturer's instructions.
  - iii. No vented perchloroethylene vapors shall bypass the carbon adsorber to the atmosphere.
- e. Cartridge filters and adsorptive cartridge filters shall be handled using one of the following methods:
  - i. Drained in the filter housing, before disposal, for no less than: 24 hours for cartridge filters and 48 hours for adsorptive cartridge filters. If the filters are then transferred to a separate device to further reduce the volume of perchloroethylene, this treatment shall be done in a system that routes any vapor to a primary control system, with no exhaust to the atmosphere or workroom.
  - ii. Dried, stripped, sparged, or otherwise treated, within the sealed filter housing, to reduce the volume of perchloroethylene contained in the filter.
- f. A still, and any muck cooker, shall not exceed 75 percent of its capacity, or an alternate level recommended by the manufacturer. A still, and any muck cooker, shall cool to 100°F (38°C) or less before emptying or cleaning.
- g. Button and lint traps shall be cleaned each working day and the lint placed in a tightly sealed container.
- h. All parts of the dry cleaning system where perchloroethylene may be exposed to the atmosphere or workroom shall be kept closed at all times except when access is required for proper operation and maintenance.
- i. Waste water evaporators shall be operated to ensure that no liquid perchloroethylene or visible emulsion is allowed to vaporize.

**302.2 Leak Check and Repair Requirements:** The trained operator, or her/his designee, shall inspect the dry cleaning system for liquid leaks and perceptible vapor leaks beginning on the applicable date shown in Column E of **Table 1**. The trained operator, or his/her designee, shall inspect the dry cleaning system for vapor leaks instead of perceptible vapor leaks beginning August 23, 1995. The District shall provide a leak inspection checklist to the facility. The trained operator, or her/his designee, shall record the status of each component on the checklist.

- a. The dry cleaning system shall be inspected at least once per week for liquid leaks and:
  - i. For perceptible vapor leaks, beginning on the applicable date shown in Column E of Table 1 until August 23, 1995.
  - ii. For vapor leaks, beginning August 23, 1995, using one of the following techniques for vapor leaks:
    - a. A halogenated-hydrocarbon detector;
    - b. A portable gas analyzer or an alternative method approved by the District.
- b. Any liquid leak, perceptible vapor leak, or vapor leak that has been detected by the operator shall be noted on the checklist and repaired according to the requirements of Section 302.2.d. If the leak is not repaired at the time of detection, the leaking component shall be physically marked or tagged in a manner that is easily observable by a District inspector.
- c. Any liquid leak, perceptible vapor leak, or vapor leak detected by the District, which has not been so noted on the checklist and marked on the leaking component of the dry cleaning system, shall constitute a violation of this Rule. For enforcement purposes, the District shall:
  - i. Identify the presence of a perceptible vapor leak based on the odor of perchloroethylene or the detection of gas flow by passing the fingers over the surface of the system.
  - ii. Identify the presence of a vapor leak by determining the concentration of perchloroethylene with a portable analyzer:
    - a. According to ARB Test Method 21 (17 CCR, Section 94124).
    - b. Measured 1 cm. away from the dry cleaning system.
- d. Any liquid leak or vapor leak shall be repaired within 24 hours of detection.
  - i. If repair parts are not available at the facility, the parts shall be ordered within two working days of detecting such a leak. Such repair parts shall be installed within five working days after receipt. A facility with a leak that has not been repaired by the end of the 15th working day shall not operate dry cleaning equipment, until the leak is repaired, without a leak-repair extension from the District.
  - ii. The District may grant a leak-repair extension to a facility, for a single period of 30 days or less, if the District makes the following findings:
    1. The delay in repairing the leak could not have been avoided by action on the part of the facility;
    2. The facility used reasonable preventive measures and acted promptly to initiate the repair;
    3. The leak would not significantly increase perchloroethylene exposure near the facility; and

4. The facility is in compliance with all other requirements of this Section and has a history of compliance.

**302.3 Environmental Training Requirements:** The facility shall have one or more trained operators beginning on the applicable date shown in Column F of **Table 1**.

- a. A trained operator shall be the owner, the operator, or another employee of the facility, who successfully completes the initial course of the environmental training program to become a trained operator. Evidence of successful completion of the initial course shall be the original record of completion issued pursuant to Title 17, California Code of Regulations, Section 93110. The trained operator shall be a full-time employee of the facility. Except for the provisions of Section 302.3.c.(ii), one person cannot serve as the trained operator for two or more facilities simultaneously.
- b. Each trained operator shall successfully complete the refresher course of an environmental training program at least once every three years. Evidence of successful completion of each refresher course shall be the date of the course and the instructor's signature on the original record of completion.
- c. If the facility has only one trained operator and the trained operator leaves the employ of the facility, the facility shall:
  - i. Notify the District in writing within 30 days of the departure of the trained operator;
  - ii. Obtain certification for a replacement trained operator within 3 months, except that a trained operator who owns or manages multiple facilities may serve as the interim trained operator at two of those facilities simultaneously for a maximum of 4 months, by which time each facility must have its own trained operator; and
  - iii. If the District determines that the initial course of an environmental training program is not reasonably available, the District may extend the certification program for a replacement trained operator until 1 month after the course is reasonably available.

**303 WATER-REPELLING AND DIP TANK OPERATIONS:** No person shall perform water-repelling or dip tank operations, after the applicable date shown in Column H of **Table 1**, unless all of the following requirements are met:

303.1 All materials to be treated with perchloroethylene water-repelling solutions shall be treated in a closed-loop machine, a converted machine, or a dip tank.

303.2 For dip tank operations:

- a. The dip tank shall be fitted with a cover that prevents the escape of perchloroethylene vapors from the tank and shall remain covered at all times, except when materials are placed in and removed from the dip tank or while the basket is moved into position for draining.
- b. After immersion, the materials shall be drained within the covered dip tank until dripping ceases.
- c. All materials removed from the dip tank shall be immediately placed into a closed-loop machine or a converted machine for drying and not removed from the machine until the materials are dry.

## **400 ADMINISTRATIVE REQUIREMENTS**

**401 NOTIFICATION:** The owner /operator shall provide the District with all of the following information, in writing:

401.1 By the applicable date shown in Column B of **Table 1**.

- a. The name(s) of the owner and operator of the facility;
- b. The facility name and location;
- c. Whether or not the facility is co-located with a residence;
- d. The number, types, and capacities for all dry cleaning equipment;
- e. Any control systems for each dry cleaning machine; and
- f. For existing facilities only, the gallons of perchloroethylene purchased by the facility during the previous calendar year.

401.2 The District may exempt a facility from the requirements of Section 401.1 if the District maintains current equivalent information on the facility.

**402 COMPLIANCE:** A facility shall comply with all provisions of this Section as follows:

402.1 By the applicable dates of compliance specified in Column A through Column H of **Table 1**.

402.2 For compliance with Section 302.3, **Environmental Training Requirements**, an alternative date of compliance shall apply if the District determines that the initial course of an environmental training program for perchloroethylene dry cleaning operations is not reasonably available.

- a. For existing facilities in the District, if the initial course is not reasonably available by March 23, 1995, the alternative date of compliance for Section 302.3 only shall be 6 months from the date the District determines that the initial course is reasonably available.
- b. For each new facility in the District, if the initial course is not reasonably available within the period from 3 months prior to 2 months following commencement of operation, the alternative date of compliance for Section 302.3 only shall be 1 month from the date the District determines that the initial course is reasonably available.

**403 ANNUAL REPORTING:** The owner or operator of a facility shall prepare and maintain an annual report. The facility owner or operator shall furnish this annual report to the District by March 31 for the previous calendar year. The annual report shall include all of the following:

403.1 A copy of the record of completion of each trained operator.

403.2 The total of the pounds of materials cleaned per load and the gallons of perchloroethylene used for all solvent additions in the reporting period.

403.3 The average facility mileage, determined from all solvent additions in the reporting period, as follows:

### **The Total of the Pounds of Materials Cleaned Per Load**

## The Total of the Gallons of Perchloroethylene Used

### 500 MONITORING AND RECORDS

**501 RECORDS:** The owner/operator shall maintain records for the specified time period, beginning on the applicable date shown in Column C of **Table 1**. These records, or copies thereof, shall be accessible at the facility at all times.

501.1 All of the following records shall be retained for at least 2 years or until the next District inspection of the facility, whichever period is longer:

- a. For each dry cleaning machine, a log showing the date and the pounds of materials cleaned per load;
- b. Purchase and delivery receipts for perchloroethylene or for only those facilities with solvent tanks that are not directly filled by the perchloroethylene supplier upon delivery, the date(s) and gallons of perchloroethylene added to the solvent tank of each dry cleaning machine;
- c. The completed leak inspection checklists required by Section 302.2 and the operation and maintenance checklists required by Section 302.1.a; and
- d. For liquid leaks, perceptible vapor leaks, or vapor leaks that were not repaired at the time of detection, a record of the leaking component(s) of the dry cleaning system awaiting repair and the action(s) taken to complete the repair. The record shall include copies of purchase orders or other written records showing when the repair parts were ordered and/or service was requested.

501.2 For dry cleaning equipment installed after March 23, 1994, the manufacturer's operating manual for all components of the dry cleaning system shall be retained for the life of the equipment.

501.3 The original record of completion for each trained operator shall be retained during the employment of that person. A copy of the record of completion shall be retained for an additional period of two years beyond the separation of that person from employment at the facility.

**502 EQUIPMENT TESTING REQUIREMENTS:** For a given design, a single test program shall be conducted, in accordance with the following procedures, to meet the specifications in Sections 301.3 and 301.4. The person or organization conducting the test program shall prepare a written test plan that describes, in detail, the dry cleaning machine and control systems being tested, the test protocol, and the test method.

**502.1 Test Program and Scope:** A minimum of three tests shall be conducted for each test program on each control system design. All tests for a single test program shall be conducted on a single dry cleaning machine.

- a. Test results for a primary control system design, or an add-on secondary control system design, may be applied to a different make/model of dry cleaning machine if the equipment designer or facility demonstrates, to the satisfaction of the District, that:
  - i. The test results would be representative of the performance of the control system design on the different make/model of dry cleaning machine; and



- ii. The control system design is properly sized for the maximum volume of recirculating air in the dry cleaning machine during the dry cleaning cycle.
- b. Test results for an integral secondary control system design may not be applied to a different make/model of dry cleaning machine.

**502.2 Test Conditions:** Testing shall be conducted under normal operating conditions, unless otherwise specified.

- a. For primary control systems and secondary control systems, each test shall be conducted during the cleaning of one load of materials.
  - i. The machine shall be filled no less than 75 percent of its capacity with materials for each test; and
  - ii. The weight of materials shall be recorded for each test.
- b. A primary control system shall be tested on a closed-loop machine, or a converted machine, without a secondary control system.
- c. A secondary control system shall be tested on a closed-loop machine.
  - i. An integral secondary control system shall be tested with the primary control system operating normally; and
  - ii. An add-on secondary control system shall be tested independent of a primary control system and the initial perchloroethylene concentration in the drum shall be 8,600 ppmv or greater.
- d. For a control system on the exhaust of a drying cabinet, each test shall be conducted following the placement of materials cleaned with perchloroethylene in the drying cabinet. The materials shall be transferred to the drying cabinet and testing shall begin no later than 15 minutes after the end of the washing and extraction process.
  - i. The drying cabinet shall be filled to no less than 50 percent of its capacity with materials for each test; and
  - ii. The weight of materials shall be recorded for each test.

**503.3 Test Method:** Equipment shall be tested in accordance with the following methods:

- a. For primary control systems and secondary control systems:
  - i. The temperature of the air in the drum shall be measured and recorded continuously during the entire drying cycle, including the operation of the secondary control system;
  - ii. Sampling shall be conducted as follows:
    - a. For primary control systems and integral secondary control systems, sampling shall begin at the end of the drying cycle and be completed within 5 minutes;
    - b. For add-on secondary control systems, sampling shall be done when the concentration of perchloroethylene is 8,600 ppmv or greater and again when the concentration reaches 300 ppmv or less; and
    - c. Sampling shall be completed prior to the opening of the machine door and activation of any fugitive control system.
  - iii. The perchloroethylene concentration in the drum shall be determined by one of the following methods:
    - a. A sampling port and valve shall be appropriately placed to draw the sample from the interior of the drum or the lint filter housing. The

sampling port shall be connected to a gas chromatograph by one-quarter (1/4) inch, outside diameter, Teflon tubing. Any sampling pump shall have Teflon diaphragms. The gas chromatograph shall measure concentrations of perchloroethylene in accordance with ARB Test Method 422 (17 CCR, Section 94132) or NIOSH Method 1003 (NIOSH Manual of Analytical Methods, U.S. Department of Health and Human Services).

- b. A sampling port and valve shall be appropriately placed to draw a sample from the interior of the drum or the lint filter housing. The sampling port shall be connected by one-quarter (1/4) inch Teflon tubing to a Tedlar bag. Any sampling pump shall have Teflon diaphragms. The concentration of perchloroethylene in the air sampled shall be measured in accordance with ARB Test Method 422 (17 CCR, Section 94132) or NIOSH Method 1003 (NIOSH Manual of Analytical Methods, U.S. Department of Health and Human Services) within 24 hours of sampling. If an independent laboratory is contracted to perform the analysis of the samples, the chain of custody procedures contained in ARB Test Method 422 or NIOSH Method 1003 shall be followed.
- b. For a control device on the exhaust of a drying cabinet, sampling and analysis shall be conducted using ARB Test Method 422 (1 CCR, Section 94132) or NIOSH Method 1003 (NIOSH Manual of analytical Methods, U.S. Department of Health and Human Services).
- c. An alternative test method deemed acceptable by the Air pollution control Officer and the Executive Office of the Air Resources Board.

503.4 All test plans and test results shall be made available to the District and the California Air Resources Board upon request.