

This document contains the Air Resources Board staff's preliminary draft of the proposed amendments to the Airborne Toxic Control Measure (ATCM) for Chromium Plating and Chromic Acid Anodizing Facilities. In addition to the proposed amendments contained here, staff is evaluating the feasibility of phasing out the use of the hexavalent chromium process for decorative chromium plating. This would mean that all decorative chromium plating would be conducted using the trivalent chromium process rather than the hexavalent chromium process. In addition to comments on the proposed amendments presented below, staff is seeking comments on the feasibility and timing of a hexavalent chromium phase-out for decorative chrome plating.

Proposed ~~Hexavalent Chromium~~ Airborne Toxic Control Measure (ATCM) for Chromium Plating and Chromic Acid Anodizing ~~Operations~~ Facilities

[Note: The proposed amendments are shown in ~~strikeout~~ to indicate proposed deletions and underline to indicate proposed additions. New quotation marks have been added to the definitions in subsection (b); these quotation marks have not been underlined to improve the readability of the regulation.]

Amend Title 17, California Code of Regulations, Section 93102, to read as follows:

Section 93102. ~~Hexavalent Chromium~~ Airborne Toxic Control Measure for Chromium Plating and Chromic Acid Anodizing ~~Operations~~ Facilities.

(a) *Applicability.*

- (1) This regulation shall apply to ~~each chromium electroplating or chromic acid anodizing tank at facilities~~ any facility performing hard chromium electroplating, decorative chromium electroplating, or chromic acid anodizing.
- (2) *How this regulation is organized.* Subsection (c) sets forth requirements that differ depending on whether a facility is an existing facility, a modified facility, or a new facility. Subsection (d) sets forth various new requirements that apply to all facilities beginning [Effective Date] (i.e., all existing, modified, and new facilities). Subsections (f) through (m) contain additional requirements that apply to all facilities. Most of the requirements in subsections (f) through (m) have been in effect since 1998. Finally, subsection (e) contains special provisions that apply only to enclosed hexavalent chromium electroplating facilities and facilities that perform electroplating using a trivalent chromium bath. Subsection (c) does not apply to these facilities; they must comply with subsection (e) instead of subsection (c).

~~(2)~~(3) Exemptions

(A) This regulation shall not apply to process tanks associated with a chromium electroplating or chromic acid anodizing process, but in which neither chromium electroplating nor chromic acid anodizing is taking place. Examples of such tanks include, but are not limited to, rinse tanks, etching tanks, and cleaning tanks. Tanks that contain a chromium solution, but in which no electrolytic process occurs, are not subject to this regulation. An example of such a tank is a chromium conversion coating tank where no electrical current is applied.

~~(3) The requirements of subsections (e), (f), and (g) do not apply to decorative chromium electroplating tanks using a trivalent chromium bath with a wetting agent.~~

(B) The requirements of subsections (c) and ~~(g)~~ (i) do not apply during periods of equipment breakdown, provided the provisions of the permitting agency's breakdown rule are met (see Appendix 6).

~~(5)~~ (4) Title V Permits

The owner or operator of a major source subject to the requirements of this section is required to obtain a title V permit (See 42 U.S.C. 7401, et seq.) from the permitting authority of the district in which the major source is located.

(b) Definitions.

For the purposes of this regulation, the following definitions shall apply:

- (1) *"Add-on air pollution control device"* means equipment installed in the ventilation system of chromium electroplating and anodizing tanks for the purposes of collecting and containing chromium emissions from the tank(s).
- (2) *"Air pollution control technique"* means any method, such as an add-on air pollution control device or a chemical fume suppressant, that is used to reduce chromium emissions from chromium electroplating and chromic acid anodizing tanks.
- (3) *"Air Sparging"* means the process of agitating or mixing an electroplating or anodizing bath by supplying pressurized air into the bath.
- (4) *"Ampere-hours"* means the integral of electrical current applied to a plating tank (amperes) over a period of time (hours).

- (5) “Annual Permitted Ampere-hour Usage” means ampere-hour usage, recorded from January 1 through December 31 in the same year, as limited in the permitting agency's Permit to Operate the Facility.
- (4)(6) “Area source” means any stationary source of hazardous air pollutants that is not a major source as defined in this part.
- (5)(7) “Base *material*” ~~metal~~ means the metal or metal alloy, or plastic that comprises the workpiece.
- (6)(8) “Bath component” means the trade or brand name of each component(s) in trivalent chromium plating baths. For trivalent chromium baths, the bath composition is proprietary in most cases. Therefore, the trade or brand name for each component(s) can be used; however, the chemical name of the wetting agent contained in that component must be identified.
- (7)(9) “Breakdown” means an unforeseeable impairment of an air pollution control equipment or related operating equipment which causes a violation of any emission limitation or restriction prescribed by a permitting agency's rule or by State law and which: is not the result of neglect or disregard of any air pollution control law, rule, or regulation; is not intentional or the result of negligence, or improper maintenance; is not a recurrent breakdown of the same equipment; and, does not constitute a nuisance pursuant to section 41700 of the California Health and Safety Code, with the burden of proving the criteria of this section placed upon the person seeking to come under the provisions of this law.
- (8)(10) “Chemical fume suppressant” means any chemical agent that reduces or suppresses fumes or mists at the surface of an electroplating or anodizing bath; another term for fume suppressant is mist suppressant.
- (9)(11) “Chromic acid” means the common name for chromium anhydride (CrO₃).
- (40)(12) “Chromic acid anodizing” means the electrolytic process by which an oxide layer is produced on the surface of a base ~~metal~~ material for functional purposes (e.g., corrosion resistance or electrical insulation) using a chromic acid solution. ~~In chromic acid anodizing, the part to be anodized acts as the anode in the electrical circuit, and the chromic acid solution, with a concentration typically ranging from 50 to 100 grams per liter (g/L), serves as the electrolyte.~~

- ~~(11)~~(13) “Chromium electroplating or chromic acid anodizing tank” means the receptacle or container in which hard or decorative chromium electroplating or chromic acid anodizing occurs, along with the following accompanying internal and external tank components needed for chromium electroplating or chromic acid anodizing. These tank components include, but are not limited to, rectifiers fitted with controls to allow for voltage adjustments, heat exchanger equipment, and circulation pumps.
- ~~(12)~~(14) “Composite mesh-pad system” means an add-on air pollution control device typically consisting of several mesh-pad stages to remove particles. The purpose of the first stage is to remove large particles. Smaller particles are removed in the second stage, which consists of the composite mesh pad. A final stage may remove any reentrained particles not collected by the composite mesh pad.
- ~~(13)~~(15) “Decorative chromium electroplating” means the process by which a thin layer of chromium (typically 0.003 to 2.5 microns/meters) is electrodeposited on a base metal, plastic, or undercoating material to provide a bright surface with wear and tarnish resistance. In this process, the part(s) serves as the cathode in the electrolytic cell and the solution serves as the electrolyte. Typical current density applied during this process ranges from 540 to 2,400 Amperes per square meter (A/m²) for total plating times ranging between 0.5 to 5 minutes.
- (16) “Dragout” is fluid containing hexavalent chromium that adheres to parts when they are removed from a tank.
- ~~(14)~~(17) “Electroplating or anodizing bath” means the electrolytic solution used as the conducting medium in which the flow of current is accompanied by movement of metal ions for the purpose of electroplating metal out of the solution onto a work piece or for oxidizing the base material.
- ~~(15)~~(18) “Emission limitation” means, for the purposes of this section, the concentration of total chromium allowed to be emitted expressed in milligrams per dry standard cubic meter (mg/dscm), and/or the allowable surface tension expressed in dynes per centimeter (dynes/cm) for decorative chromium electroplating and chromic acid anodizing tanks; and the milligrams of hexavalent chromium per ampere-hour (mg/amp-hr) of electrical charge applied to the chromium electroplating or anodizing tank for hard chromium electroplating tanks.
- (19) “Enclosed storage area” is any space or structure used to contain material that prevents its contents from being emitted into the atmosphere.

- (20) "Enclosed hexavalent chromium electroplating tank" means a hard, decorative or chromic acid anodizing tank using a hexavalent chromium solution that is equipped with an enclosing hood and ventilated at half the rate or less that of an open surface tank of the same surface area.
- (21) "Existing Facility" means a facility that is in operation before {Effective Date}.
- (16)(22) "Facility" means the major or area source at building, structure, or area in which chromium electroplating or chromic acid anodizing is performed.
- (17)(23) "Fiber-bed mist eliminator" means an add-on air pollution control device that removes ~~contaminants~~ particles from a gas stream through the mechanisms of inertial impaction and Brownian diffusion. ~~These devices are typically installed downstream of another control device, which serves to prevent plugging, and consist of one or more fiber beds. Each bed consists of a hollow cylinder formed from two concentric screens; the fiber between the screens may be fabricated from glass, ceramic, plastic, or metal.~~
- (18)(24) "Foam blanket" means the type of chemical fume suppressant that generates a layer of foam across the surface of a solution when current is applied to that solution. A foam blanket does not lower surface tension of a liquid.
- (19)(25) "Fresh water" means water, such as tap water, that has not been previously used in a process operation or, if the water has been recycled from a process operation, it has been treated and meets the effluent guidelines for chromium wastewater.
- (26) "Fugitive dust" for the purpose of this section means any solid particulate matter that may contain hexavalent chromium that has the potential to become airborne by natural or man-made activities. "Fugitive dust" does not include particulate matter emitted from an exhaust stack.
- (20)(27) "Hard chromium electroplating or industrial chromium electroplating" means a process by which a thick layer of chromium (typically greater than 1.0 micrometers) is electrodeposited on a base material to provide a surface with functional properties such as wear resistance, a low coefficient of friction, hardness, and corrosion resistance. In this process, the part serves as the cathode in the electrolytic cell and the solution serves as the electrolyte. Hard chromium electroplating process is performed at current densities typically ranging from 1,600 to 6,500

~~A/m² for total plating times ranging from 20 minutes to 36 hours depending upon the desired plate thickness.~~

- ~~(24)~~(28) *"Hexavalent chromium"* means the form of chromium in a valence state of +6.
- ~~(22)~~(29) *"High Efficiency Particulate Air (HEPA) filter"* means filter(s) rated at 99.97 percent or more efficient in collecting particle sizes 0.3 micrometers or larger.
- (30) *"Initial Startup"* means the first time a new facility begins production or the first time a modified facility begins operating at a modified source. If such production or operation occurs prior to [Effective date], the date of "Initial Startup" is [Effective date]. "Initial Startup" does not include operation solely for testing of equipment or subsequent startup of permit units following malfunction or shutdown.
- ~~(23)~~(31) *"Large, hard chromium electroplating facility"* means a facility that performs hard chromium electroplating and emits greater than or equal to 10 pounds per year (lbs/yr) controlled emissions of hexavalent chromium.
- ~~(24)~~(32) *"Leak"* means the release of chromium emissions from any opening in the emission collection system prior to exiting the emission control device.
- ~~(25)~~(33) *"Major source"* means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.
- ~~(26)~~(34) *"Maximum cumulative potential rectifier capacity"* means the summation of the total installed rectifier capacity associated with the hard chromium electroplating tanks at a facility, expressed in amperes, multiplied by the maximum potential operating schedule of 8,400 hours per year and 0.7, which assumes that electrodes are energized 70 percent of the total operating time. The maximum potential operating schedule is based on operating 24 hours per day, 7 days per week, 50 weeks per year.
- ~~(27)~~(35) *"Mechanical fume suppressant"* means any device, such as polyballs, that reduces fumes or mist at the surfaces of an electroplating or anodizing bath by direct contact with the surface of the bath. ~~Polyballs are the most commonly used mechanical fume suppressant.~~

~~(28)~~(36) *"Medium, hard chromium electroplating facility"* means a facility that performs hard chromium electroplating and emits greater than 2 pounds per year (lbs/yr) controlled emissions but less than 10 pounds per year (lbs/yr) controlled emissions of hexavalent chromium.

~~(29)~~(37) *"Modification"* means either:

(A) any physical change in, change in method of operation of, a change in annual ampere-hours that exceeds permitted ampere-hours, or addition to an existing permit unit that requires an application for a permit to construct and/or operate. Routine maintenance and/or repair shall not be considered a physical change. A change in the method of operation of equipment, unless previously limited by an enforceable permit condition, shall not include:

~~1. an increase in the production rate, unless such increases will cause the maximum design capacity of the equipment to be exceeded; or~~

~~1.~~2. an increase in the hours of operation; or

~~2. 3.~~ a change in ownership of a source. ~~;~~ ~~or~~

(B) the addition of any new permit unit at an existing source; or

(C) the fixed capital cost of the replacement of components exceeding 50 percent of the fixed capital cost that would be required to construct a comparable new source.

(38) "Modified Facility" means any facility which has undergone a modification.

(39) "New Facility" means any facility that begins initial operations on or after [Effective Date]. "New Facility" does not include the installation of a new permit unit at an existing facility or the modification of an existing facility.

~~(30)~~(40) *"Operating parameter value"* means a minimum or maximum value established for a control device or process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator is in continual compliance with the applicable emission limitation or standard.

(41) "Owner or Operator" means a person who is the owner or the operator of a facility performing hard chromium electroplating, decorative chromium electroplating, or chromic acid anodizing.

~~(31)~~(42) *"Packed-bed scrubber"* means an add-on air pollution control device consisting of a single or double packed-bed that contains packing media on which the chromic acid droplets impinge. ~~The packed-bed section of the scrubber is followed by a mist eliminator to remove any water entrained from the packed-bed section.~~

(43) *"Permitting Agency"* means the local air pollution control or air quality management district.

(44) *"Person"* shall have the same meaning as defined in Health and Safety Code section 39047.

~~(32)~~(45) *"Responsible official"* means one of the following:

- (A) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities and either:
 - 1. The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
 - 2. The delegation of authority to such representative is approved in advance by the Administrator.
- (B) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.
- (C) For a municipality, state, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of the U.S. EPA).
- (D) For sources (as defined in this part) applying for or subject to a title V permit: "responsible official" shall have the same meaning as defined in 40 CFR Part 70 or federal title V regulations in this chapter (42 U.S.C. 7401, et seq.), whichever is applicable.

- ~~(33)~~(46) *"Small, hard chromium electroplating facility"* means a facility that performs hard chromium electroplating and emits less than or equal to 2 pounds per year (lbs/yr) controlled emissions of hexavalent chromium.
- (47) *"Sensitive receptor"* means any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes individuals housed in long term care hospitals, prisons, and dormitories or similar live-in housing.
- ~~(34)~~(48) *"Source"* means any chromium electroplating or chromic acid anodizing operation and any equipment or materials associated with the selected associated air pollution control technique.
- ~~(35)~~(49) *"Stalagmometer"* means ~~a device used to measure the surface tension of a solution.~~ an instrument used to measure the surface tension of a solution by determining the mass of a drop of liquid by weighing a known number of drops or by counting the number of drops obtained from a given volume of liquid.
- ~~(36)~~(50) *"Surface tension"* means the property, due to molecular forces, that exists in the surface film of all liquids and tends to prevent liquid from spreading.
- (51) *"Tank"* means the structure or receptacle containing the electroplating or anodizing bath.
- ~~(37)~~(52) *"Tank operation"* means the time in which current and/or voltage is being applied to a chromium electroplating tank or a chromic acid anodizing tank.
- ~~(38)~~(53) *"Tensiometer"* means ~~a device used to measure the surface tension of a solution.~~ an instrument used to measure the surface tension of a solution by determining the amount of force needed to pull a ring from the liquid surface. The amount of force is proportional to the surface tension.
- ~~(39)~~(54) *"Trivalent chromium"* means the form of chromium in a valence state of +3.
- ~~(40)~~(55) *"Trivalent chromium process"* means the process used for electrodeposition of a thin layer of chromium onto a base material using a trivalent chromium solution instead of a chromic acid solution.

~~(41)~~(56) "Weekly" means at least once every seven calendar days.

~~(42)~~(57) "Wetting agent" means the type of chemical fume suppressant that reduces the surface tension of a liquid.

(c) ~~Standards-Requirements for Existing, Modified, and New Hexavalent Chromium Plating and Chromic Acid Anodizing Facilities~~

This subsection (c) sets forth requirements that differ depending on whether a facility is an existing facility, a modified facility or a new facility. Additional requirements that apply to all facilities (i.e., all existing, modified, and new facilities) are contained in subsection (d) and subsection (f) through (m).

(1) ~~Requirements that Apply to Existing Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities~~

An existing facility is a facility that is in operation before [Effective Date].

~~(4)~~(A) ~~Limits that apply to Existing Hard Chromium Electroplating Facilities until [Two years after Effective Date] Hard Chromium Electroplating Operations.~~

Until [Two years after Effective Date] existing hard chromium plating facilities must comply with the limits specified in this subsection (c)(1)(A).

After [Two years after Effective Date] existing hard chromium electroplating facilities must comply with the requirements set forth in subsection (c)(1)(C) instead of subsection (c)(1)(A).

During tank operation, each owner or operator of an existing, ~~modified, or new~~ facility shall control hexavalent chromium emissions discharged to the atmosphere from that source by reducing the hexavalent chromium emissions from the add-on air pollution control device(s) serving the electroplating tank(s) as identified below.

(A)1. Limits that apply until [Two years after Effective Date] for Existing Operations (on or before 12/16/93) Hard Chromium Electroplating Facilities that Began Operations on or before December 16, 1993.

Facility Size	Controlled emissions (lbs/yr) ¹	Requirement		
		≤ 60 million Amp-hrs ²	> 60 million amp-hrs ²	
			Option 1	Option 2 ³
Large	≥ 10 lbs/yr	≤ 0.006 mg/amp-hr	≤ 0.006 mg/amp-hr	≤ 0.006 mg/amp-hr
Medium	< 10 lbs/yr but > 2 lbs/yr	≤ 0.03 mg/amp-hr	≤ 0.006 mg/amp-hr	≤ 0.03 mg/amp-hr and 0.015 mg/dscm
Small	≤ 2 lbs/yr	≤ 0.15 mg/amp-hr	≤ 0.03 mg/amp-hr	≤ 0.15 mg/amp-hr and 0.015 mg/dscm

(B)2. New and/or Modified Operations (after 12/16/93) Limits that apply until [Two years after Effective Date] for Existing Hard Chromium Electroplating Facilities that Began Operations after December 16, 1993 and before [Effective Date].

Facility Size	Controlled emissions (lbs/yr) ¹	Requirement	Requirement
		≤ 60 million Amp-hrs ²	> 60 million amp-hrs ²
Large	≥ 10 lbs/yr	≤ 0.006 mg/amp-hr	≤ 0.006 mg/amp-hr
Medium/ Small	< 10 lbs/yr	≤ 0.03 mg/amp-hr	≤ 0.006 mg/amp-hr

¹ combined hexavalent or total chromium emissions from hard chromium plating operations.

² maximum cumulative potential rectifier capacity or usage limit.

³ "Option 2" is an alternative emission limitation for small and medium facilities that elect to demonstrate compliance with both a mg/amp-hr and a mg/dscm requirement.

~~(C)3.~~ Special provisions that apply until [Two years after Effective Date] for Very small operations-Hard Chromium Electroplating Facilities using less than or equal to 500,000 ampere-hours per year.

This subsection applies until [Two years after Effective Date]. After [Two years after Effective Date] there are no special provisions that apply to hard chromium electroplaters using less than or equal to 500,000 ampere-hours per year; these facilities must comply with the same regulatory requirements that apply to all hexavalent chromium electroplating facilities. The permitting agency may approve, on a case-by-case basis, alternative standards for ~~small hard chromium plating operations~~ chromium electroplating facilities using less than or equal to 500,000 ampere-hours per year. The operation must have been constructed on or before December 16, 1993. At a minimum, before [Six months after Effective Date] the source must use a chemical fume suppressant containing a wetting agent to lower the surface tension of the plating bath to at least 45 dynes per centimeter (dynes/cm) (3.1x10⁻³ pound-force per foot [lbF/ft]). After [Six months after the Effective Date] sources that use chemical fume suppressants must comply with the requirements of subsection (d)(1) and (g). The permitting agency may require additional emission reduction techniques as necessary to reduce the public health impact of emissions from the operation. The owner or operator must comply with the applicable monitoring [subsection (e)(h)], recordkeeping [subsection (h)(k)], and reporting [subsection (i)(l)] requirements. The owner or operator must submit a plan to the permitting agency describing the alternative technique and identifying appropriate monitoring, recordkeeping, and reporting requirements. The permitting agency, with U.S. EPA concurrence, shall approve this plan if equivalent results are obtained. Upon approval, the requirements identified in the plan shall be the applicable requirements under this regulation.

~~(B)(2)~~ Requirements that apply to Existing Hexavalent Decorative Chromium Electroplating and Chromic Acid Anodizing Facilities until [Two years after Effective Date]

Until [Two years after Effective Date] existing hexavalent decorative chromium electroplating and chromic acid anodizing facilities must comply with the limits specified below in this subsection (c)(1)(B).

After [Two years after Effective Date] existing hexavalent decorative chromium electroplating and chromic acid anodizing facilities must

comply with the requirements set forth in subsection (c)(1)(C) instead of subsection (c)(1)(B).

During tank operation, each owner or operator of an existing, ~~modified, or new source~~ decorative hexavalent chromium electroplating or chromic acid anodizing facility shall control hexavalent chromium emissions discharged to the atmosphere by meeting either of the requirements identified below.

Method of compliance	Requirement
<u>1.</u> Add-on air pollution control equipment, or chemical fume suppressants, or mechanical fume suppressants (i.e. polyballs)	0.01 milligrams per dry standard cubic meter of air (mg/dscm) (4.4x10 ⁻⁶ gr/dscf)
<u>2.</u> Chemical fume suppressants * <u>-</u> containing a wetting agent	45 dynes per centimeter (dynes/cm) * <u>-</u> (3.1x10 ⁻³ pound-force per foot [lbF/ft])

* After [Six months after Effective Date] decorative chromium electroplating and chromic acid anodizing facilities that choose to comply by using a chemical fume suppressant alone (i.e., Method of Compliance No. 2.) must comply with the requirements of subsections (d)(1) and (g) instead of the requirements set forth in this table.

(C) Requirements that Apply to all Existing Hexavalent Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Facilities After [Six months after Effective Date].

1. The requirements of this subsection (c)(1)(C) apply to all existing hard and decorative chromium electroplating and chromic acid anodizing facilities. Some of the requirements become effective on [Six months after Effective Date]. Other requirements become effective on [Two years after Effective Date]. The date that each requirement becomes effective is specified below. In addition, the requirements differ depending on the size of the facility (i.e., the amount of permitted ampere-hours) and the distance of the facility from the nearest sensitive receptor (i.e., within 100 meters or more than 100 meters from the sensitive receptor). The distance to the nearest sensitive receptor shall be measured from the edge of the facility that is nearest to the sensitive receptor to the property boundary of the sensitive receptor. The measurement shall be rounded to the nearest one meter and the permitting agency shall confirm the correctness of the measurement.

2. Requirements for Existing Facilities Located at or Within 100 Meters of a Sensitive Receptor, and With Annual Permitted Ampere-hour Usage Equal to or Less than 95,000.

- a. After [Six months after Effective Date] existing facilities located at or within 100 meters from a sensitive receptor, and with annual permitted ampere-hour usage less than or equal to 95,000, must either use a chemical fume suppressant or must comply with the requirements specified below in subsection (c)(1)(C)3. for facilities with annual permitted ampere-hour usage greater than 95,000. If the owner or operator of a facility chooses to comply by using a chemical fume suppressant, the owner or operator must comply with subsections (d)(1) and (g).
- b. Beginning [Six months after Effective Date] comply with subsections (d) and (h) through (m).

3. Requirements for Existing Facilities Located at or Within 100 Meters of a Sensitive Receptor, and with Annual Permitted Ampere-hour Usage Greater than 95,000.

After [Two years after Effective Date] during tank operation the owner or operator of a facility must reduce hexavalent chromium emissions from the electroplating or anodizing tank(s) by:

- a. Installing a HEPA add-on air pollution control device; or meeting an emission limit of 0.0015 milligrams per ampere-hour or less after add-on controls, and
- b. Using a chemical fume suppressant as specified in subsections (d)(1) and (g).
- c. Conducting a performance test in accordance with procedures specified in subsection (f) to establish the emission rate for the add-on air pollution control device(s) in mg/amp-hr.
- d. The owner or operator of a facility with actual annual emissions of hexavalent chromium equal to or greater than 0.007 pounds/year must conduct a site specific analysis before [Two years after Effective Date]. The analysis shall be conducted in accordance with the permitting agency's "Air Toxics Hot Spots" program and shall be performed using the "Office of Environmental Health Hazard Assessment's Risk Assessment Guidelines," [date of Guidelines] which is incorporated by reference herein.

- e. Comply with subsections (d) and (f) through (m).
- 4. Requirements for Existing Facilities Located More than 100 Meters from a Sensitive Receptor, and With Annual Permitted Ampere-hour Usage Less than or Equal to 330,000.
 - a. After [Six months after Effective Date] existing facilities located more than 100 meters from a sensitive receptor, and with annual permitted ampere-hour usage less than or equal to 330,000, must either use a chemical fume suppressant or must comply with the requirements specified below in subsection (c)(1)(C)5. for facilities with annual permitted ampere-hour usage greater than 330,000. If the owner or operator of a facility chooses to comply by using a chemical fume suppressant, the owner or operator must comply with subsections (d)(1) and (g).
 - b. Beginning [Six months after Effective Date] comply with subsections (d) and (h) through (m).
- 5. Requirements for Existing Facilities Located More than 100 Meters from a Sensitive Receptor, and with annual permitted ampere-hour usage greater than 330,000:

After [Two years after Effective Date] during tank operation the owner or operator of a facility must reduce hexavalent chromium emissions from the electroplating or anodizing tank(s) by:

- a. Installing a HEPA add-on air pollution control device; or meeting an emission limit of 0.0015 milligrams per ampere-hour or less after add-on controls, and
- b. Using a chemical fume suppressant as specified in subsections (d)(1) and (g).
- c. Conducting a performance test in accordance with procedures specified in subsection (f) to establish the emission rate for the add-on air pollution control device(s) in mg/amp-hr.
- d. The owner or operator of a facility with actual annual emissions of hexavalent chromium equal to or greater than 0.009 pounds/year must conduct a site specific analysis before [Two years after Effective Date]. The analysis shall be conducted in accordance with the permitting agency's "Air Toxics Hot Spots" program and shall be performed using the "Office of Environmental Health Hazard Assessment's Risk Assessment

Guidelines,” [date of Guidelines] which is incorporated by reference herein.

e. Comply with subsections (d) and (f) through (m).

(2) Requirements for Modified Hexavalent Chromium Electroplating or Chromic Acid Anodizing Facilities After [Effective Date]

(A) During tank operation, each owner or operator of a modified facility shall control hexavalent chromium emissions discharged to the atmosphere from that facility by reducing the hexavalent chromium emissions from the electroplating or anodizing tank(s) as identified below:

1. Installing a HEPA add-on air pollution control device; or
2. Meeting an emission limit of 0.0015 milligrams per ampere-hour or less after add-on controls, and

(B) Using a chemical fume suppressant as specified in subsections (d)(1) and (g), and,

(C) Conduct a performance test in accordance with procedures specified in subsection (f) to establish the emission rate for the add-on air pollution control device(s) in mg/amp-hr.

(D) The owner or operator of a facility with actual annual emissions of hexavalent chromium equal to or more than 0.007 pounds/year shall conduct a site specific analysis prior to initial startup of a modified facility. The analysis shall be conducted in accordance with the permitting agency’s “Air Toxics Hot Spots” program and shall be performed using the most recent Office of Environmental Health Hazard Assessment’s Risk Assessment Guidelines [Date].

(E) Comply with the requirements of subsections (d) and (f) through (m).

(3) Requirements for New Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities Beginning [Effective Date]

(A) No person shall operate a new facility unless it is located outside of an area that is zoned for residential or mixed use and is located at least 500 feet from the boundary of any area that is zoned for residential or mixed use as determined by the permitting agency.

1. A new facility shall be deemed to meet the requirements specified in this subpart (c)(3)(A) if one of the following criteria is met, even

if the facility does not meet the requirement at the time of initial startup (e.g., because of a zoning change that occurs after the authority to construct is issued):

- a. The requirements specified in subpart (c)(3)(A) are met at the time it is issued an authority to construct by the permitting agency, and substantial use of the authority to construct takes place within one year after it is issued; or
 - b. The requirements specified in subpart (c)(3)(A) are met at the time it is issued an authority to construct by the permitting agency, and substantial use of the authority to construct takes place before any zoning change occurs that affects the operation's ability to meet the requirement at the time of initial startup.
- (B) During tank operation, each owner or operator of a new facility shall control hexavalent chromium emissions discharged to the atmosphere from that facility by reducing the hexavalent chromium emissions from the electroplating or anodizing tank(s) as follows:
1. Control hexavalent chromium emissions with a HEPA add-on air pollution control device; and
 2. Use a chemical fume suppressant as specified in subsections (d)(1) and (g), and
 3. Conduct a site specific analysis prior to initial start-up. The facility's analysis shall be conducted in accordance with the permitting agency's "Air Toxics Hot Spots" program and shall be performed using the most recent Office of Environmental Health Hazard Assessment's Risk Assessment Guidelines [date], and
 4. Comply with the permitting agency's "New Source Review" requirements; and the Notification requirements of subsection(c)(4), and
 5. Comply with the requirements contained in subsection (d) and (f) through (m).
- (C) Prior to initial startup, demonstrate to the permitting agency that the operation meets the requirements specified in subsection (c)(3)(A) and /or the criteria specified above in subsection (c)(3)(A)1.

~~(3) Decorative Chromium Electroplating Tanks Using a Trivalent Chromium Bath.~~

[Note: This subsection has been modified and moved to subsection (e) of this regulation]

~~(A) During tank operation, each owner or operator of an existing, modified, or new source shall control chromium emissions discharged to the atmosphere by meeting either of the requirements identified below.~~

Method of compliance	Requirement
Add-on air pollution control equipment, or chemical fume suppressants, or mechanical fume suppressants (i.e. polyballs)	< 0.01 mg/dscm (4.4x10 ⁻⁶ gr/dscf)
Chemical fume suppressants containing a wetting agent	use wetting agent as bath ingredient and comply with recordkeeping and reporting provisions of subsections (h)(9) and (i)(5).

(4) Notification Requirements for New and Modified Sources

[Note: This subsection has been moved from subsection (j) to this subsection (c). It has also been modified.]

(A) Notification of Construction Reports.

1. No person may construct or modify a source, such that it becomes a source subject to this section 93102, without submitting a notification of construction or modification to the permitting agency and receiving approval in advance to construct or modify the source.
2. The contents of the Notification of Construction Report shall include the information contained in Appendix 4.

(B) Alternative Notification Requirements: Instead of complying with the requirements in paragraph (c)(4)(A)1. of this subsection, a facility may fulfill these requirements by complying with the permitting agency's "New Source Review" requirements, provided similar information is obtained.

(d) Requirements that Apply to All Hexavalent Chromium Plating or Chromic Acid Anodizing Facilities Beginning [Effective Date]

The requirements of subsection (d) apply to all existing, modified, and new hexavalent chromium plating or chromic acid anodizing facilities.

Each Owner or Operator of a hexavalent chromium plating or chromic acid anodizing facility shall comply with the following requirements on or after the dates specified below:

- (1) Use of Chemical Fume Suppressants. After [Six months after Effective Date] all hexavalent chromium electroplating and chromic acid anodizing facilities must use chemical fume suppressants as specified in subsection (g) and must maintain the surface tension of the electroplating or anodizing bath(s) below the level specified in subsection (g).
 - (A) Facilities may apply to the permitting agency to have the requirements in (d)(1) waived provided that:
 1. The facility is using a HEPA Add-on air Pollution Control Device or is meeting an emission rate of 0.0015 mg/amp-hr or less after add-on control; and
 2. The facility provides good cause as to why the chemical fume suppressant can not be used to conduct the electroplating or anodizing operation.
- (2) Removal of Add-on Pollution Control Device(s). No add-on pollution control device(s) installed before [Effective Date] shall be removed or rendered inoperable unless it is replaced by a HEPA add-on air pollution control device, or it is replaced by an add-on air pollution control device(s) meeting an emission rate of 0.0015 mg/amp-hr or less after the add-on air pollution control device.
- (3) Air Sparging of Plating or Anodizing Tanks. After [Effective Date], no hexavalent chromium electroplating or chromic acid anodizing tank shall be air sparged.
- (4) Environmental Compliance Training. No later than [Two years after Effective Date] and within every two years thereafter, the owner or operator of a facility, or personnel designated by the owner or operator that are responsible for maintaining environmental compliance, shall complete an Air Resources Board (ARB) Compliance Assistance Training Course.

- (A) On or after [Two years after the Effective Date] environmental compliance and recordkeeping required by this section 93102 shall be conducted only by persons who completed an ARB Compliance Assistance Training Course.
 - (B) In the event that all persons who have completed the ARB training class are no longer associated with a facility, the owner or operator may be responsible for environmental compliance and recordkeeping required by this section for a period of time not to exceed two years. The owner or operator shall ensure that as soon as practicable, but not longer than two years, personnel complete the training specified in subsection (d)(4).
 - (C) Environmental compliance training conducted by the South Coast Air Quality Management District pursuant to Rule 1469 shall fulfill the requirements of this subpart.
 - (D) Nothing in this subsection (d)(4) shall absolve an owner or operator from complying with this section 93102.
- (5) Housekeeping Requirements. Effective [Six months after Effective Date], housekeeping practices shall be implemented to reduce potential fugitive emissions of hexavalent chromium. At a minimum, the following practices shall be implemented:
- (A) Chromic acid powder or flakes, or other substances that may contain hexavalent chromium, shall be stored in a closed container in an enclosed storage area;
 - (B) Chromic acid powder or flakes shall be transported from an enclosed storage area to the electroplating or anodizing bath(s) in a closed container;
 - (C) Any liquid or solid material that may contain hexavalent chromium that is spilled shall be cleaned up or contained within one hour after being spilled.
 - (D) Dragout from the tank(s) shall be minimized by implementing the following practices:
 - 1. Facilities with automated lines. Drip trays shall be installed between tanks so that the liquid does not fall through the space between tanks. Trays shall be placed such that the liquid is returned to the tank(s).

2. Facilities without automated lines.

- a. Each electroplated or anodized part must be handled so that excess chromic acid is not dripped outside the electroplating tank.
 - b. Each facility spraying down parts over the electroplating or anodizing tank(s) to remove excess chromic acid shall have a splash guard installed around the tank to minimize overspray and to ensure that any hexavalent chromium laden liquid is returned to the electroplating or anodizing tank.
- (E) Surfaces within the enclosed storage area, open floor area, walkways around the electroplating or anodizing tank(s), or any surface potentially contaminated with hexavalent chromium, that accumulates or potentially accumulates dust shall be washed down, HEPA vacuumed, hand wiped with damp cloth, or wet mopped, or shall be maintained with the use of non-toxic chemical dust suppressants at least once per week;
- (F) Buffing, grinding, or polishing areas within a facility shall be separated from the source by installing a physical barrier. The barrier may take the form of plastic drapes.
- (G) Chromium or chromium-containing wastes generated from housekeeping activities shall be stored, disposed of, recovered, or recycled using practices that do not lead to fugitive dust and in accordance with hazardous waste requirements.
- (e) *Special Provisions that Apply Only to Facilities that Perform Electroplating Using a Trivalent Chromium Bath and Enclosed Hexavalent Chromium Electroplating Facilities.*
- (1) *Provisions that Apply to All Facilities that Perform Electroplating Using a Trivalent Chromium Bath.*
- (A) During tank operation, each owner or operator of an existing, modified, or new source shall control chromium emissions

discharged to the atmosphere by meeting either of the requirements identified below.

[Note: This is an existing table that has been moved from subsection (c)(3) of the existing regulation. It has not been underlined in order to make it easier to read.]

Method of compliance	Requirement
Add-on air pollution control equipment, or chemical fume suppressants, or mechanical fume suppressants (i.e. polyballs)	< 0.01 mg/dscm (4.4x10 ⁻⁶ gr/dscf)
Chemical fume suppressants containing a wetting agent	use wetting agent as bath ingredient and comply with recordkeeping and reporting provisions of subsections (h) (k)(9) and (i) (l)(5).

(B) New facilities that perform electroplating using a trivalent chromium bath must comply with the requirements specified in subsection (c)(3)(A).

(C) An owner or operator that performs electroplating using a trivalent chromium bath and complying through use of a chemical fume suppressant containing a wetting agent shall not be required to comply with the requirements of subsections (d), (f), (g), (h)(4), (i), (j), (k)(1)-(8), and (k)(11).

(2) Requirements for Enclosed Hexavalent Chromium Electroplating Tanks.

(A) The owner or operator of an enclosed hexavalent chromium electroplating source must comply with the requirements specified below:

1. During tank operation, each owner or operator of an enclosed hexavalent chromium electroplating source shall control hexavalent chromium emissions discharged to the atmosphere from that source by reducing the hexavalent chromium emissions from the electroplating tank as identified below.
 - a. A hexavalent chromium emission limitation of 0.015 mg/dscm as measured from the add-on air pollution control device(s); or
 - b. Using a chemical fume suppressant specified in subsection (g), and maintaining the surface tension of the plating bath solution at a value specified in subsection (g); or

- c. Not allowing the mass rate of the total chromium to exceed the maximum allowable mass emission rate determined by using the calculation procedure specified in Appendix 7.
2. New facilities that perform hexavalent chromium electroplating and control hexavalent chromium emissions by enclosing the tank must comply with the requirements specified in subsection (c)(3)(A).
3. The owner or operator of an existing enclosed hexavalent chromium electroplating source shall comply with the requirements of subsection (f) by conducting a smoke test as specified in (f)(3)B.

~~(d)~~(f) *Performance Test Requirements and Test Methods.*

(1) *Performance test requirements.*

~~Any source subject to the emission standards in subsection (c)(1)(A) or (B), or any source electing to comply with the mg/dscm emission standard in subsections (c)(2) or (c)(3), shall conduct a performance test to demonstrate compliance with the applicable emission standards within 180 days after initial startup.~~

- (A) All of the following facilities must conduct a performance test to determine the hexavalent chromium emission rate.
 1. Existing facilities complying with (c)(1)(C)3. or 5.
 2. Facilities that modify after [Effective Date].
 3. New facilities.
 4. Trivalent chromium plating facilities meeting the emission rate in (e)(1)A.
- (B) All existing facilities must conduct the performance test required by this subsection (f) no later than [Two years after Effective Date]. New and modified facilities must conduct a performance test before initial startup.
- (C) The performance test shall be conducted using one of the approved test methods specified in subsection (f)(3). The hexavalent chromium emission rate shall be multiplied by the facility annual permitted ampere-hour usage to determine the annual emissions of hexavalent chromium for the facility.

(2) Use of ~~existing~~ previously conducted performance tests.

~~A performance test conducted prior to July 24, 1997 may be used to demonstrate compliance provided the existing source test is approved by the permitting agency and the U.S. EPA.~~

A performance test conducted after January 1, 2000 may be used to satisfy the requirements of this subsection (f) so long as the following criteria are met:

1. The add-on pollution control device tested was a HEPA system or an add-on control device that reduced hexavalent chromium emissions to 0.0015 mg/amp-hr or less for hexavalent chromium plating or chromic acid anodizing facilities, or 0.01mg/dscm for trivalent chromium plating facilities, and
2. The performance test was approved by the permitting agency, and
3. The test is representative of the add-on air pollution device currently in use as of [Effective Date], and
4. The performance test was conducted using one of the approved test methods specified in subsection (e)(3).

(3) *Approved test methods.*

(A) Emissions testing for hexavalent and total chromium shall be conducted with a minimum of three test runs in accordance with one of the following test methods:

1. CARB Test Method 425, last amended July 28, 1997, (section 94135, Title 17, California Code of Regulations (CCR); or
2. U.S. EPA Method 306, (40 CFR 63 Appendix A) ~~with a minimum of three test runs~~ with hexavalent chromium option (Method 306, Section 2.2.3); or
3. South Coast Air Quality Management District Method 205.1, ~~for results reported as total chromium.~~

(B) Smoke Test to Verify the Seal Integrity of Covers Designed to Reduce Chromium Emissions from Electroplating and Anodizing Tanks (See Appendix 5.)

- (C) Surface tension using a tensiometer shall be measured in accordance with U.S. EPA Method 306B (40 CFR 63 Appendix A). Surface tension using a stalagmometer shall be measured using the procedure set forth in Appendix 8.
- (4) *Pre-Test protocol.* Sources subject to the provisions of subsection (f)(1) must submit a pre-test protocol to the permitting agency at least 60 days prior to conducting a performance test. The pre-test protocol shall include the performance test criteria of the end user and all assumptions, required data, and calculated targets for testing the source target chromium concentration, the preliminary chromium analytical data, and the planned sampling parameters. In addition, the pre-test protocol shall include information on equipment, logistics, personnel, and other resources necessary for an efficient and coordinated test.
- (5) Test all emission points. Each emission point subject to the requirements of this regulation must be tested unless a waiver is granted by U.S. EPA, and approved by the permitting agency.

(g) Chemical Fume Suppressants.

Chemical fume suppressants used to comply with subsections (c)(1), (c)(2), (c)(3), and (e)(2)(A)1.b. shall meet the criteria specified in this subsection (g).

- (1) One or more of the chemical fume suppressants listed in Table G-1 shall be used to reduce the surface tension of the electroplating or anodizing bath(s) below the surface tension value listed in Table G-1. The surface tension value may be measured using either a stalagmometer or a tensiometer.

[Table G-1 is a new table. For clarity it is not shown in underline/strikeout]

Table G-1: Chemical Fume Suppressants Approved for Use at Specified Surface Tensions

Chemical Fume Suppressant and Manufacturer	Stalagmometer Measured Surface Tension (dynes/centimeter)	Tensiometer Measured Surface Tension (dynes/centimeter)
Benchbrite CR 1800® Benchmark Products	< 40	< 35
Clepo Chrome® MacDermid	< 40	< 35
Fumetrol 140® Atotech U.S.A.	< 40	< 35

- (2) Alternative chemical fume suppressants. Chemical fume suppressants not listed in Table G-1 may be used upon approval by the Executive Officer. The Executive Officer shall approve the use of an alternative chemical fume suppressant if the following criteria are met:
- (A) The chemical fume suppressant has been performance tested in a hexavalent chromium electroplating or anodizing bath and demonstrated to reduce the hexavalent chromium emissions below 0.01 milligrams per ampere hour; and
- (B) In the performance testing, the hexavalent chromium emission rate of 0.01 milligrams per ampere-hour was achieved under conditions in which the surface tension did not exceed 45 dynes/cm, as measured by a stalagmometer or 35 dynes/cm, as measured by a tensiometer.
- (3) A chemical fume suppressant that is listed in subsection (g)(1) or has been approved under subsection (g)(2) may no longer be used if the Executive Officer determines that the chemical fume suppressant is no longer able to reduce the hexavalent chromium emission rate below 0.01 milligrams per ampere-hour under conditions in which the surface tension does not exceed 45 dynes/cm, as measured by a stalagmometer or 35 dynes/cm, as measured by a tensiometer.

(e)(h) *Parameter Monitoring Requirements.*

- (1) *Ampere-hours.* Each electroplating or anodizing tank or group of electroplating or anodizing tanks shall have installed a continuous recording, non resettable, ampere-hour meter that operates on the electrical power lines connected to the tank or group of tanks. A separate meter shall be hard-wired for each rectifier.
- (2) *Pressure drop.* The owner or operator shall continuously monitor the pressure drop across an add-on control device such as a composite mesh-pad (CMP), packed-bed scrubber (PBS), a CMP/PBS, fiber-bed mist eliminator, and a High Efficiency Particulate Air (HEPA) filter with a mechanical gauge. The gauge shall be located so that it can be easily visible and in clear sight of the operation or maintenance personnel. The pressure drop shall be maintained within $+4 \pm 2$ inch of water of the value established during the performance test to demonstrate compliance with the emission limitation for CMP, PBS, a CMP/PBS, and a fiber-bed mist eliminator. The pressure drop shall be maintained within $- \frac{1}{2}$ times to $+2$ times the inches of water of the value established during the performance test to demonstrate compliance with the emission limitation for HEPA filters.

- (3) *Inlet velocity pressure.* The owner or operator shall continuously monitor the inlet velocity pressure of a packed-bed scrubber with a mechanical gauge. The gauge shall be located so that it can be easily visible and in clear sight of the operation or maintenance personnel. The inlet velocity pressure shall be maintained within + 10 percent of the value established during the performance test to demonstrate compliance with the emission limitation.
 - (4) *Surface tension.* The owner or operator shall measure and monitor the surface tension of the ~~chromium electroplating or chromic acid anodizing tank bath(s) that contains a wetting agent~~ with either a stalagmometer using the procedure in Appendix 8 of this section 93102, or with a tensiometer using U.S. EPA Method 306B (40 CFR part 63, Appendix A). The surface tension shall be maintained ~~at or~~ below the value required by subsection ~~(e)(2)~~ (g). Surface tension shall be measured daily for 20 operating days, and weekly thereafter as long as there is no violation of the surface tension requirement. If a violation occurs, the measurement frequency shall return to daily for 20 operating days, and weekly thereafter.
 - (5) *Foam blanket thickness.* The owner or operator shall monitor the foam blanket thickness across the surface of the ~~chromium electroplating or chromic acid anodizing bath tank~~. The foam blanket thickness shall be maintained consistent with the requirements established during the performance test to demonstrate compliance with the emission limitation. Foam thickness shall be measured hourly for 15 operating days, and daily thereafter as long as there is no violation of the foam thickness requirement. If a violation occurs, the measurement frequency shall return to hourly for 15 operating days, and daily thereafter.
 - (6) ~~Polyballs or similar m~~ *Mechanical fume suppressants.* The owner or operator shall visually inspect the ~~chromium electroplating or chromic acid anodizing tank bath~~ for coverage comparable to the coverage during the performance test daily.
- (f) (i) *Inspection and Maintenance Requirements.*
- (1) ~~Hard and decorative chromium~~ Hexavalent chromium electroplating, and chromic acid anodizing ~~operations~~ facilities using add-on air pollution control equipment shall comply with the applicable inspection and maintenance requirements listed in Table ~~(f)~~ (i)(1).

Table (f)(i)(1) -- Summary of Inspection and Maintenance Requirements for Sources Using Add-on Air Pollution Control Devices

Control Technique/Equipment	Inspection and Maintenance Requirements	Frequency
<u>Composite mesh-pad (CMP) system, Packed-bed scrubber (PBS), or PBS/CMP</u>	1. Visually inspect device to ensure that there is proper drainage, no unusual chromic acid buildup on the pads, <u>and / or packed beds</u> and no evidence of chemical attack that affects the structural integrity of the device.	1. 1/quarter.
	2. Visually inspect back portion of the mesh pad closest to the fan to ensure there is no breakthrough of chromic acid mist <u>and/or back portion of the chevron mist eliminator to ensure it is dry and there is no breakthrough of chromic acid mist.</u>	2. 1/quarter.
	3. Visually inspect ductwork from tank to the control device to ensure there are no leaks.	3. 1/quarter.
	4. Perform washdown of the composite mesh pads in accordance with <u>manufacturer's recommendations and/or add fresh makeup water to the packed bed when it is needed.</u>	4. Per manufacturer.
Packed-bed scrubber (PBS)	1. Visually inspect device to ensure there is proper drainage, no unusual chromic acid buildup on the packed-beds, and no evidence of chemical attack that affects the structural integrity of the device.	1. 1/quarter.
	2. Visually inspect back portion of the chevron blade mist eliminator to ensure that it is dry and there is no breakthrough of chromic acid mist.	2. 1/quarter.
	3. Same as number 3 above for CMP system.	3. 1/quarter.
	4. Add fresh makeup water to the packed-bed^A	4. Whenever makeup is needed.
PBS/CMP system	1. Same as for CMP system	1. 1/quarter.
	2. Same as for CMP system	2. 1/quarter.
	3. Same as for CMP system	3. 1/quarter.
	4. Same as for CMP system	4. Per manufacturer.

Fiber-bed mist eliminator ^A	1. Visually inspect fiber-bed unit and prefiltering device to ensure there is proper drainage, no unusual chromic acid buildup in the units, and no evidence of chemical attack that affects the structural integrity of the devices. Same as number 1 for CMP/PBS.	1. 1/quarter.
	2. Visually inspect ductwork from tank or tanks to the control device to ensure there are no leaks. Same as number 3 for CMP/PBS.	2. 1/quarter.
	3. Perform washdown of fiber elements in accordance with manufacturer's recommendations. Same as number 4 for CMP/PBS.	3. Per manufacturer.
High Efficiency Particulate Air (HEPA) filter	1. Look for changes in the pressure drop.	1. 1/week.
	2. Replace HEPA filter.	2. Per manufacturer's specifications or permitting agency's requirement.
Chromium Tank Covers <u>[facilities complying with subsection (e)(2)]</u>	1. Drain the air-inlet (purge air) valves at the end of each day that the tank is in operation.	1. 1/day.
	2. Visually inspect access door seals and membranes for integrity.	2. 1/week.
	3. Drain the evacuation unit directly into the plating tank or into the rinse tanks (for recycle into the plating tank).	3. 1/week.
	4. Visually inspect membranes for perforations using a light source that adequately illuminates the membrane (e.g., Grainger model No. 6X971 Fluorescent Hand Lamp).	4. 1/month.
	5. Visually inspect all clamps for proper operation; replace as needed.	5. 1/month.
	6. Clean or replace filters on evacuation unit.	6. 1/month.
	7. Visually inspect piping to, piping from, and body of evacuation unit to ensure there are no leaks and no evidence of chemical attack.	7. 1/quarter.

	8. Replace access door seals, membrane evacuation unit filter, and purge air inlet check valves in accordance with the manufacturer's recommendations.	8. per manufacturer.
Pitot tube	Backflush with water, or remove from the duct and rinse with fresh water. Replace in the duct and rotate 180 degrees to ensure that the same zero reading is obtained. Check pitot tube ends for damage. Replace pitot tube if cracked or fatigued.	1/quarter.
Ampere-hour meter	Install and maintain per manufacturer's specifications.	Per manufacturer.
<u>Stalagmometer/ Tensiometer</u>	<u>Calibrate and maintain per manufacturer's specifications.</u>	<u>Per manufacturer.</u>

^A ~~Horizontal packed-bed scrubbers without continuous recirculation must add make-up water to the top of the packed bed.~~

^{AB} Inspection and maintenance requirements for the control device installed upstream of the fiber-bed mist eliminator to prevent plugging do not apply as long as the inspection and maintenance requirements for the fiber-bed unit are followed.

~~(2) Hard and decorative chromium Hexavalent Chromium electroplating, and chromic acid anodizing operations facilities using chemical fume suppressants (i.e. wetting agent, foam) or mechanical fume suppressants (i.e. polyballs) shall comply with the applicable inspection and maintenance requirements in Table (f)(2).~~

[Table (f)(2) is proposed for deletion]

~~Table (f)(2) -- Summary of Inspection and Maintenance Requirements for Sources Using Chemical or Mechanical Fume Suppressants~~

Equipment	Inspection and Maintenance Requirement for Monitoring Equipment	Frequency
Ampere-hour meter	Install and maintain per manufacturer's specifications	Per manufacturer
Stalagmometer/ Tensiometer	Calibrate and maintain per manufacturer's specifications	Per manufacturer

- (2) Add-on Air Pollution Control Device(s) that is custom designed for a specific operation shall develop operating and maintenance requirements. The requirements shall be submitted to the permitting agency for review. The requirements and frequency of inspection should be sufficient to ensure compliance.

~~(g)~~ (i) *Operation and Maintenance Plan (O & M plan) Requirements.*

- (1) Prepare the O & M plan. The owner or operator subject to the inspection and maintenance requirements of subsection ~~(f)~~ (i)(1) and (2) shall prepare an operation and maintenance plan. For major sources, the plan shall be incorporated by reference into the source's title V permit. The plan shall incorporate the inspection and maintenance requirements for that device or monitoring equipment, as identified in Table ~~(f)~~ (i)(1) or subpart (2) of this section and include the following elements:
- (A) A standardized checklist to document the operation and maintenance of the source, the add-on air pollution control device, and the process and control system monitoring equipment; and
- (B) Procedures to be followed to ensure that equipment is properly maintained. [To satisfy the inspection and maintenances of this subsection, the owner or operator may use applicable standard operating procedure (SOP) manuals, Occupational Safety and Health Administration (OSHA) plans, or other existing plans, provided the alternative plans meet the requirements of this subsection.]
- (2) Retain the O & M plan. The owner or operator shall keep the written operation and maintenance plan on record after it is developed to be made available for inspection, upon request, during normal working hours.
- (3) Changes to the O & M plan. Any changes made by the owner or operator should be documented in an addendum to the plan. In addition, the owner or operator shall keep previous (i.e., superseded) versions of the operation and maintenance plan on record to be made available for inspection, upon request, during normal working hours, for a period of 5 years after each revision to the plan.
- (4) Revisions to the O & M plan to address breakdowns. The operation and maintenance plan shall be revised as necessary to minimize breakdowns.

~~(h)~~(k) Recordkeeping Requirements.

(1) Inspection records for sources using add-on control air pollution control devices. The owner or operator shall maintain inspection records to document that the inspection and maintenance requirements of subsection ~~(f)~~ (i) and Table ~~(f)~~ (i)(1), and the provisions of the operation and maintenance plan required by subsection ~~(g)~~ (j) have been met. The record can take the form of a checklist and shall identify:

- (A) the device inspected,
- (B) the date and time of inspection,
- (C) a brief description of the working condition of the device during the inspection,
- (D) maintenance activities performed on the components of the air pollution control system (i.e. duct work replacement, filter pad replacement, fan replacement, etc), and
- (E) actions taken to correct deficiencies found during the inspection.

~~(2)~~ **Inspection records for sources using chemical fume suppressants (i.e. wetting agent, foam) or mechanical fume suppressants (i.e. polyballs).** The owner or operator shall maintain inspection records to document that the inspection and maintenance requirement of subsection ~~(f)~~(2) and Table ~~(f)~~(2) have been met. The record can take the form of a checklist.

~~(3)~~(2) Performance test records. The owner or operator shall maintain test reports documenting the conditions and results of all performance tests.

~~(4)~~(3) Monitoring data records. The owner or operator shall maintain records of monitoring data required by subsection ~~(e)~~ (h) that are used to demonstrate compliance with the standard including the date and time the data are collected.

- (A) Cumulative rectifier usage records. Record the actual cumulative rectifier usage expended during each month of the reporting period, and the total usage expended to date.
- (B) Pressure drop. The owner or operator shall record the pressure drop once a week.
- (C) Inlet Velocity Pressure. The owner or operator shall record the inlet velocity pressure weekly.

- (D) Surface tension. The owner or operator shall record the surface tension daily for 20 operating days, and weekly thereafter as long as there is no violation of the surface tension requirement. If the surface tension exceeds ~~45 dynes/cm~~ levels specified in subsection (g), the owner or operator shall again record the surface tension daily for 20 operating days, and weekly thereafter.
- (E) Foam thickness. The owner or operator shall record the foam thickness hourly for 15 operating days, and daily thereafter as long as there is no violation of the foam thickness requirement. If a violation occurs, the measurement frequency shall return to hourly for 15 operating days, and daily thereafter.
- ~~(5)~~(4) Breakdown records. The owner or operator shall maintain records of the occurrence, duration, and cause (if known) and action taken on each breakdown.
- ~~(6)~~(5) Records of excesses. The owner or operator shall maintain records of exceedances of: the emission limitations in subsection (c), the monitoring parameter values established under subsection ~~(e)~~ (g), or any site-specific operating parameters established for alternative equipment. The records shall include the date of the occurrence, the duration, cause (if known), and, where possible, the magnitude of any excess emissions.
- ~~(7)~~(6) Records demonstrating facility size. Facility size for determining the applicable emission limitation in subsection (c)(1)(A) is determined by the maximum cumulative potential rectifier capacity. However, a facility with a maximum cumulative potential rectifier capacity of 60 million amp-hr/yr or more may, at the option of the owner or operator, be considered small or medium if the actual cumulative rectifier usage is less than 60 million amp-hr/yr as demonstrated by using either of the following procedures:
 - (A) Annual actual cumulative rectifier capacity. Show by records that the facility's previous annual actual cumulative rectifier capacity was less than 60 million amp-hr/yr, by using nonresettable ampere-hour meters and keeping monthly records of actual ampere-hour capacity for each 12-month rolling period following the compliance date. The actual cumulative rectifier capacity for the previous 12-month rolling period shall be tabulated monthly by adding the capacity for the current month to the capacities for the previous 11 months; or
 - (B) Maximum cumulative potential rectifier usage limit. By accepting a limit on the maximum cumulative potential rectifier usage of a hard chromium electroplating facility through a title V permit condition or a

permitting agency operating permit condition and by maintaining monthly records in accordance with subsection ~~(h)(4)~~ (k)(3)(A) to demonstrate that the limit has not been exceeded.

- (7) Records of annual ampere-hour use. Sources shall maintain monthly records of total ampere-hour use per calendar year. The record shall be submitted to the permitting agency as part of their Initial and Ongoing Compliance Status Reports as specified in Appendix 2 and 3.
- (8) Records of chemical fume suppressant additions. For sources using chemical fume suppressants to comply with the standards or requirements, the owner or operator shall maintain records of the date, time, approximate volume, and product identification of the chemical fume suppressants that ~~are~~ is added to the electroplating or anodizing bath.
- (9) Records of trivalent chromium process bath-components. For sources complying with subsection ~~(e)(3)~~ (e)(1) using the trivalent chromium baths process, the owner or operator shall maintain records of the bath components purchased, with the wetting agent clearly identified as a bath constituent contained in one of the components.
- (10) New/modified source review information. The owner or operator shall maintain records supporting the notifications and reports required by the permitting agency's new source review provisions and/or subsection ~~(j)(c)(4)~~.
- (11) Housekeeping records. The owner or operator shall maintain records demonstrating compliance with housekeeping requirements, as required by subsection (d), including the dates on which specific activities were completed, and records showing that chromium or chromium-containing wastes have been stored, disposed of, recovered, or recycled using practices that do not lead to fugitive dust.
- ~~(40)~~(12) Records retention. All records shall be maintained for five years, at least two years on site.

~~(j)(l)~~ Reporting Requirements.

- (1) Performance test documentation.
 - (A) Notification of performance test.
 1. The owner or operator of a source shall notify the permitting agency of his or her intention to conduct a performance test at least 60 calendar days before the performance test is scheduled.

2. The provisions in subsection (i)(1)(A)1., above, do not apply if the performance test was conducted prior to July 24, 1997, was used to demonstrate compliance with (c)(1)(A) or (B) or (e)(1), and was approved by the permitting agency and the U.S. EPA.
 - (B) Reports of performance test results. The owner or operator shall report performance test results to the permitting agency. Reports of performance test results shall be submitted no later than 90 days following the completion of the required performance test, and shall be submitted as part of the notification of compliance status required by paragraph (2) of this subsection.
 - (C) The content of performance test reports shall contain the information is identified in Appendix 1.
- (2) Initial compliance status report. An initial compliance status report is required each time that a source becomes subject to the requirements of this section. The owner or operator shall submit to the permitting agency an initial compliance status report, signed by the responsible official who shall certify its accuracy, attesting to whether the source has complied with this rule.
 - (A) Initial compliance status report due date.
 - ~~1. For sources required to conduct a performance test, the initial compliance status report shall be submitted to the permitting agency no later than 90 calendar days following completion of the compliance demonstration.~~
 - 1.2. For sources that are not required to complete a performance test, ~~†~~The initial compliance status report shall be submitted to the permitting agency no later than 30 days after the effective date of this rule for existing sources, or at start-up for new sources.
 - (B) The content of the initial compliance status report shall contain the information is identified in Appendix 2.
- (3) Ongoing compliance status reports. The owner or operator shall submit a summary report to the permitting agency to document the ongoing compliance status.
 - (A) Frequency of ongoing compliance status reports.
 1. The report shall be submitted to the permitting agency on or before February 1 annually for ~~major~~ all sources and shall include

information for the preceding calendar year (January 1 through December 31).

~~2. The report shall be prepared annually and made available to the permitting agency upon request for area sources.~~

(B) The content of ongoing compliance status reports shall include the information is identified in Appendix 3.

(4) Reports of breakdowns. The owner or operator shall report breakdowns as required by the permitting agency's breakdown rule.

(5) Reports associated with the trivalent chromium process ~~baths using a wetting agent.~~

(A) Sources currently using the trivalent chromium process.

1. Owners or operators electroplating with the trivalent chromium process ~~baths~~ using a wetting agent are not subject to paragraphs (1) through (3) of this subsection (l), but ~~must instead~~ shall submit to the permitting agency the following information ~~reports~~:

~~(A) Sources currently using trivalent chromium. N~~ no later than 30 days after the effective date of this rule: ~~, the owner or operator shall submit a notification of compliance status that contains:~~

~~1-a.~~ 1-a. The name and address of each source subject to this paragraph;

~~2-b.~~ 2-b. A statement that a trivalent chromium process that incorporates a wetting agent will be used to comply with these requirements; and

~~3-c.~~ 3-c. The list of bath components that comprise the trivalent chromium bath, with the wetting agent clearly identified.

2. An owner or operator electroplating with the trivalent chromium process and complying with the emission limitation option in subsection (e)(1) shall submit the information contained in paragraphs (1), (2), and (3) of this subsection (l). The report shall be submitted in accordance with the schedules identified in those paragraphs.

(B) Sources changing to the trivalent chromium process. Within 30 days of a change to the trivalent chromium electroplating process,

the owner or operator shall submit to the permitting agency a report that includes:

1. Facilities electroplating with the trivalent chromium process using a wetting agent shall submit the following information:
 - a. The name and address of each source subject to this paragraph; and
 - b. A statement that a trivalent chromium process that incorporates a wetting agent will be used to comply with these requirements; and
 - c. The list of bath components that comprise the trivalent chromium bath, with the wetting agent clearly identified; and-
 - 4.d. A description of the manner in which the process has been changed, and emission limitation, if any, now applicable to the source; and
2. Facilities electroplating with the trivalent chromium process and complying with the emission limitation option in (e)(1) shall submit the information contained in paragraphs (1), (2), and (3) of this subsection (l). The report shall be submitted in accordance with the schedules identified in those paragraphs.

~~2. — The notification and reporting requirements of paragraphs (1), (2), and (3) of this subsection, if the source complies with the emission limitation option, or paragraph (5) of this subsection, if the source uses a wetting agent to comply. The report shall be submitted in accordance with the schedules identified in those paragraphs.~~

- (6) Adjustments to the timeline for submittal and format of reports. A permitting agency may adjust the timeline for submittal of periodic reports, allow consolidation of multiple reports into a single report, establish a common schedule for submittal or reports, or accept reports prepared to comply with other State or local requirements. Prior to allowing an adjustment, the permitting agency must find that the adjustment will provide the same information and will not alter the overall frequency of reporting.

~~(j)~~ *New and Modified Sources.*

[Note: this subsection has been moved to subsection (c) and has been modified.]

~~(1) — Notification of Construction Reports. After the effective date of this rule no person may construct or modify a source, such that it becomes a source subject to this section, without submitting a notification of construction or modification to the permitting agency and receiving approval in advance to construct or modify the source. The contents of the Notification of Construction Report is contained in Appendix 4.~~

~~(2) — New Source Review Rules. In lieu of complying with the requirements in paragraph (j)(1) of this subsection, a facility may fulfill these requirements by complying with the permitting agency's new source review rule or policy, provided similar information is obtained.~~

~~(k)(m)~~ *Procedure for Establishing Alternative Requirements.*

- (1) *Request Approval of an Alternative Requirement.* Any person may request approval of an alternative requirement. The person seeking such approval shall submit the proposed alternative requirement to the permitting agency for approval. The request must include the proposed alternative requirement, the reason for requesting the alternative requirement, and information demonstrating that the criteria for approval identified in Table ~~(k)(m)~~(1) is are met.
- (2) *Approval of an Alternative Requirement.* A permitting agency may approve an alternative requirement if it determines that application of the alternative requirement meets the criteria for approval identified in Table ~~(k)(m)~~(1), and the permitting agency has received concurrence by the ARB and U.S. EPA where concurrence is required.
- (3) *Concurrence for an Alternative Requirement.* For those requirements identified in Table ~~(k)(m)~~(1) as requiring concurrence by the U.S. EPA and ARB, the permitting agency shall submit the alternative requirement to the concurring agency prior to final action by the permitting agency.
- (4) *Reports of Approved Alternative Requirements to U.S. EPA.* The permitting agency shall provide the U.S. EPA and ARB with copies of all approved alternative requirements. The information shall be provided at a mutually agreed upon frequency.
- (5) *Approval Criteria.* Nothing in this section prohibits the permitting agency from establishing approval criteria more stringent than required in Table ~~(k)(m)~~(1).

(6) *Alternatives Approved by U.S. EPA.* Waivers obtained from U.S. EPA prior to the effective date [Effective Date] of this regulation shall remain in effect until the effective dates of the requirements in subsections (c)(1)(A)3., (c)(1)(B), and (c)(1)(C) become effective.

Table ~~(k)~~(m)(1) -- Requirements for Approval of Alternatives

Subsection	Requirement	Criteria for Approval	Approving Agency	Concurring Agency ⁽⁴⁾ (1)
(a)	Applicability	equivalent type and size of source regulated	District	U. S. EPA
(c)	Standards <u>Limits and requirements</u>	equivalent emission reductions	District	U. S. EPA, <u>ARB</u>
(d) (f)(1)	Performance test requirement	equivalent means of determining compliance	District	U. S. EPA
(d) (f)(2)	Use of existing source test	Overall existing tests provide a similar level of compliance assurance	District	U. S. EPA
(d) (f)(3)	Alternative test method	provides a similar level of accuracy and precision	District	U. S. EPA ARB
(d) (f)(4)	Amendments to the pre-test protocol	equivalent means of determining compliance	District	U. S. EPA
(d) (f)(5)	Test all emission points	equivalent means of determining compliance	District	U. S. EPA
(e) (h)	Parameter monitoring	equivalent means of determining and assuring compliance	District	U. S. EPA
(f) (i)	Inspection maintenance requirements	equivalent means of assuring compliance	District	U. S. EPA
(g) (j)	Operation and maintenance plans	equivalent means of assuring compliance	District	U. S. EPA
(h) (k)(1)-- (10) <u>(6) and (8-10)</u>	Record- keeping	equivalent means of assuring compliance	District	U. S. EPA

(h)(k) (11)(12)	Retention of records	assure historical records available for up to 5 years	District	U. S. EPA
(i)(l)	Reporting	equivalent means of assuring compliance	District	U. S. EPA

NOTE: Authority cited: sections 39600, 39601, 39650, 39658, 39659, 39666, and 41511, Health and Safety Code. Reference: sections 39650, 39658, 39659, 39665, 39666, and 41511, Health and Safety Code; and 40 CFR Part 63 Subpart N.

⁴ U.S. EPA or the implementing agency in accordance with any delegation of authority to approve alternatives from the U.S. EPA.

Appendix 1 - Content of Performance Test Reports.

Performance test reports required by subsection (l) shall contain the following information:

1. A brief process description;
2. Sampling location description(s);
3. A description of sampling and analytical procedures and any modifications to standard procedures;
4. Test results in mg/amp-hr;
5. Quality assurance procedures and results;
6. Records of operating conditions during the test, preparation of standards, and calibration procedures;
7. Original data for field sampling and field and laboratory analyses;
8. Documentation of calculations; and
9. Any other information required by the test method.

Note: Test reports consistent with the provisions of ARB Method 425 will fulfill the above performance test report content requirement.

Appendix 2 - Content of Initial Compliance Status Reports.

Initial compliance status reports required by subsection (l) shall contain the following information:

- ~~1. The applicable emission limitation and the methods that were used to determine compliance with this limitation;~~
 - ~~2. If a performance test is required, the test report documenting the results of the performance test, which contains the elements listed in Appendix 1;~~
 - ~~3. The type and quantity of hazardous air pollutants emitted by the source reported in mg/dscm or mg/hr for decorative and anodizing operations. (If the owner or operator is subject to the construction and modification provisions of subsection (j) and had previously submitted emission estimates, the owner or operator shall state that this report corrects or verifies the previous estimate.) For sources not required to conduct a performance test, the surface tension measurement may fulfill this requirement;~~
 - ~~4. For each monitored parameter for which a compliant value is to be established under subsection (e), the specific operating parameter value, or range of values, that corresponds to compliance with the applicable emission limit;~~
 - ~~5. The methods that will be used to determine continuous compliance, including a description of monitoring and reporting requirements, if methods differ from those identified in this section;~~
 - ~~6. A description of the air pollution control technique for each emission point;~~
 - ~~7. A statement that the owner or operator has completed and has on file the operation and maintenance plan as required by subsection (g);~~
1. Company Information: Facility name, address, owner/operator name, telephone number, the measured distance from the edge of the facility that is nearest to the sensitive receptor to the property boundary of the sensitive receptor that is within 500 feet;
 2. The applicable requirements from subsection (c) and the methods that were used to determine compliance. A description of the air pollution control technique for each emission point;
 3. If a facility is using add-on controls to comply provide the following:
 - a) Description of add-on controls and a performance test report documenting the results of the performance test, which contains the elements listed in Appendix 1;

- b) The actual hexavalent chromium emissions of the source in pounds per year calculated by multiplying the emission rate with the actual ampere-hours for the preceding calendar year.
 - c) For monitored parameters (h) (2) and (3), the specific operating parameter value, or range of values, that corresponds to compliance with the applicable emission limit;
 - d) A statement that the owner or operator has completed and has on file the operation and maintenance plan as required by subdivision (i);
4. If a facility is using in-tank controls to comply, provide the following:
- a) Description of in-tank controls including name of in tank controls, name of chemical fume suppressant, surface tension of the electroplating or anodizing bath;
 - b) For monitored parameters (h) (4) (5) and (6), the specific operating parameter value where applicable, or range of values, that corresponds to compliance;
5. The actual cumulative ampere-hour usage expended during preceding calendar year.
- ~~8.~~ 6. If the owner or operator is determining facility size based on actual cumulative rectifier usage, records to support that the facility is small or medium. For existing sources, records from any 12-month period preceding the compliance date shall be used or a description of how operations will change to meet a small or medium designation shall be provided. For new sources, records of projected rectifier usage for the first 12-month period of tank operation shall be used;
7. A statement that the owner or operator, or personnel designated by the owner or operator, has completed Environmental Compliance Training pursuant to (d)(4);
- ~~9.~~ 8. A statement by the owner or operator as to whether the source has complied with the provisions of this section 93102.
-

Appendix 3 - Content of Ongoing Compliance Status Reports.

Ongoing compliance status reports required by subsection I shall contain the following information:

- ~~1.~~ 1. The company name and address of the source; 1. Company Information: Facility name, address, owner/operator name, telephone number, the measured distance from the edge of the facility that is nearest to the sensitive receptor to the property boundary of the sensitive receptor that is within 500 feet;
- ~~2.~~ An identification of the operating parameter that is monitored for compliance determination, as required by subsection (e);
- ~~3.~~ 2. The relevant emission limitation requirements for the source, and the operating parameter value, or range of values, that correspond to compliance with this emission limitation as specified in the notification of initial compliance status required by Appendix 2;
- ~~4.~~ The beginning and ending dates of the reporting period;
- ~~5.~~ A description of the type of process performed in the source;
- ~~6.~~ 3. The actual cumulative rectifier ampere-hour usage expended during the reporting period, on a month-by-month basis, for the reporting period January 1 through December 31; if the source is a hard chromium electroplating tank;
- ~~4.~~ The actual hexavalent chromium emissions of the source during the reporting period in pounds per year calculated by multiplying the emission rate with the actual ampere-hour usage for the reporting period;
- ~~7.~~ 5. A summary of any excess emissions or exceeded monitoring parameters as identified in the records required by subsection (h)(6) (k)(5);
- ~~8.~~ 6. A certification by a responsible official that the inspection and maintenance requirements in subsection (f)(i) were followed in accordance with the operation and maintenance plan for the source;
- ~~9.~~ 7. If the operation and maintenance plan required by subsection (g)(j) was not followed, an explanation of the reasons for not following the provisions, an assessment of whether any excess emissions and/or monitoring parameter excesses are believed to have occurred, and a copy of the record(s) required by subsection (h)(k)(1) documenting that the operation and maintenance plan was not followed;
- ~~10.~~ 8. A description of any changes in monitoring, processes, or controls since the last reporting period;
- ~~9.~~ A statement that the owner or operator, or personnel designated by the owner or operator, has, within the last 2 years, completed Environmental Compliance Training pursuant to (d)(4);
- ~~11.~~ 10. The name, title, and signature of the responsible official who is certifying the accuracy of the report; and
- ~~12.~~ 11. The date of the report.

Appendix 4 - Notification of Construction Reports.

Notification of Construction Reports required by subsection (c)(4) shall contain the following information:

- A. The owner or operator's name, title, and address;
- B. The address (i.e., physical location) or proposed address of the source if different from the owner's or operator's;
- C. A notification of intention to construct a new source and certification that all of the criteria specified in subsection (c)(3) are met.
- D. A notification of intention to ~~or~~ make any physical or operational changes to a source that may meet or has been determined to meet the criteria for a modification;
- ~~D.~~ E. The expected commencement and completion dates of the construction or modification;
- ~~E.~~ F. The anticipated date of (initial) startup of the source;
- ~~F.~~ G. The type of process operation to be performed (hard or decorative chromium electroplating, or chromic acid anodizing);
- ~~G.~~ H. A description of the air pollution control technique to be used to control emissions, such as preliminary design drawings and design capacity if an add-on air pollution control device is used; and
- ~~H.~~ I. An estimate of emissions from the source based on engineering calculations and vendor information on control device efficiency, expressed in units consistent with the emission limits of this subpart. Calculations of emission estimates should be in sufficient detail to permit assessment of the validity of the calculations.

Note: A facility can fulfill these report content requirements by complying with the permitting agency's new source review rule or policy, provided similar information is obtained.

Appendix 5 - Smoke Test for Chromium Tank Covers.

SMOKE TEST TO VERIFY THE SEAL INTEGRITY OF COVERS DESIGNED TO REDUCE CHROMIUM EMISSIONS FROM ELECTROPLATING AND ANODIZING TANKS

1. Applicability and Principle

1.1 Applicability. This alternative method is applicable to all hard chromium electroplating and anodizing operations where a chromium tank cover is used on the tank for reducing chromium emissions.

1.2 Principle. During chromium electroplating or anodizing operations, bubbles of hydrogen and oxygen gas generated during the process rise to the surface of the tank liquid and burst. Upon bursting, tiny droplets of chromic acid (chromium mist) become entrained in the air above the tank. Because the chromium tank cover completely encloses the air above the tank, the chromium mist either falls back into the solution because of gravity or collects on the inside walls of the chromium tank cover and runs back into the solution. A semi-permeable membrane allows passage of the hydrogen and oxygen out of the chromium tank cover. A lit smoke device is placed inside the chromium tank cover to detect leaks at the membrane, joints, or seals.

2. Apparatus

2.1 Smoke device. Adequate to generate 500 to 1000 ft³ of smoke/20 ft² of tank surface area (e.g., Model #1A=15 SECONDS from Superior Signal, New York).

2.2 Small container. To hold the smoke device.

3. Procedure

Place the small container on a stable and flat area at center of the chromium tank cover (you can use a board and place it on the buss bars). Place the smoke device inside the container. After lighting the smoke device, quickly close the access door to avoid smoke from escaping. Let smoke device completely burn; entire space under the chromium tank cover will now be filled with the smoke. Observe for leaks of smoke from each seal, joint, and membrane of the chromium tank cover. Record these observations including the locations and a qualitative assessment of any leaks of smoke.

When all seals, joints, and membranes have been observed, evacuate the unit to remove the smoke from the chromium tank cover.

Appendix 6 - Air Pollution Control or Air Quality Management District Breakdown Rules.

DISTRICT	RULE #	RULE NAME
Amador	516	Upset and breakdown conditions
Antelope	430	Breakdown provisions
Bay Area	1	General provisions and definitions
Butte	275	Reporting procedures for excess emissions
Calaveras	516	Upset and breakdown conditions
Colusa	1.13	Equipment breakdown
El Dorado	516	Upset and breakdown conditions
Feather River	9.6	Equipment breakdown
Glenn	95.2	Malfunction of equipment
Great Basin	403	Breakdown
Imperial	111	Equipment breakdown
Kern	111	Equipment breakdown
Lake	Chapter III, Article II	Malfunction
Lassen	2:15	Equipment breakdown
Mariposa	516	Upset and breakdown conditions
Mendocino	R1-5-540	Equipment breakdown
Modoc	2.12	Equipment breakdown
Mojave	430	Breakdown provisions
Monterey Bay	214	Breakdown condition
North Coast	3-4-540	Breakdown and violation reporting
North Coast	1-5-540	Equipment breakdown
Northern Sierra	516	Upset and breakdown conditions
Northern Sonoma	1-5-540	Equipment breakdown
Placer	404	Upset cond. Breakdown. Scheduled maintenance
Sacramento	602	Breakdown conditions: emergency variance
San Diego	98	Breakdown conditions: emergency variance
San Joaquin	110	Equipment breakdown
San Luis Obispo	107	Breakdown or upset conditions and emergency variances

Santa Barbara	505	Breakdown conditions
Santa Barbara	506	Emergency variances for breakdowns
Shasta	3:10	Excess emissions
Siskiyou	2.12	Equipment breakdown (Siskiyou)
South Coast	430	Breakdown provisions
Tehama	4:17	Upset or breakdown conditions
Tuolumne	516	Upset and breakdown conditions
Ventura	32	Breakdown conditions; emergency variances
Yolo Solano	5.2	Upset/breakdown conditions: emerg. variance

Appendix 7 – Alternative Requirements for Enclosed Hexavalent Chromium Electroplating Facilities – Mass Emission Rate Calculation Procedure

Mass Emission Rate Should be calculated using the following equation:

$$\text{MAMER} = \text{ETSA} \times \text{K} \times 0.015 \text{ mg/dscm}$$

Where:

MAMER = the alternative emission rate for enclosed hexavalent chromium electroplating tanks in mg/hr.

ETSA = the hexavalent chromium electroplating tank surface area in square feet(ft²).

K = a conversion factor, 425 dscm/(ft²x hr).

Appendix 8 – Surface Tension Procedure for a Stalagmometer

The stalagmometer must first be properly cleaned before being used for the first time and after a period of storage. Properly clean the stalagmometer using the following procedure:

1. Set up stalagmometer in stand in a fume hood.
2. Place a clean 150 mL beaker underneath the stalagmometer then fill with reagent grade concentrated nitric acid. Immerse bottom tip (approximately ½ ") of stalagmometer into the beaker.
3. Squeeze rubber bulb and pinch at the arrow up (1) position to collapse. Place bulb end securely on top end of stalagmometer. Carefully draw the nitric acid by pinching the arrow up (1) position until the level is above the top etched line.
4. Allow nitric acid to remain in stalagmometer for 5 minutes and then carefully remove the bulb allowing the acid to completely drain.
5. Fill a clean 150 mL beaker with distilled or deionized water. Using the rubber bulb per the instructions in Step #3, rinse and drain stalagmometer with deionized or distilled water until the inside is "water break" free.
6. Fill a clean 150 mL beaker with alcohol. Again using the rubber bulb per Step #3, rinse and drain stalagmometer twice with alcohol and allow the stalagmometer to dry completely.
7. Take a sample of the solution to be tested and adjust the solution to room temperature. Measure the specific gravity and record reading.
8. Fill a clean 150 mL beaker with solution to be tested. Immerse bottom end of stalagmometer into the beaker. Fill the stag per instructions in Step #3, making sure that the solution level is above the top etched line.
9. Raise the stalagmometer so that the bottom end is completely out of solution. Remove bulb and immediately place a finger on the top end of the stalagmometer. Carefully use the finger to bring the solution level down to the top etched line. Do not release finger at this time.
10. "Wipe" the excess solution on the lower tip by touching it against the side of the beaker.
11. Release fingertip to allow solution to drain and count number of drops until the level reaches the bottom etched line.

Calculations for Surface Tension

$$\text{Surface tension (dynes/cm)} = \frac{S_w * N_w * D}{N * D_w}$$

S_w = Surface tension of water at 25°C or 77°F (72.75 dynes/cm)

N_w = water drop number etched on instrument

D = measured specific gravity (g/ml)

N = # of solution drops

D_w = water density (1.0 g/mL)

PRECAUTIONS:

1. Make sure they stalagmometer is clean (no sludge or film)
2. No chips, cracks, etc
3. Vertical placement
4. No vibration
5. 20 drops per minute rate (10 dynes/cm)
6. Performance checked with water
7. Sample at room temperature

NOTE: Authority cited: sections 39600, 39601, 39650, 39658, 39659, 39666, and 41511, Health and Safety Code. Reference: sections 39650, 39658, 39659, 39665, 39666, and 41511, Health and Safety Code; and 40 CFR Part 63 Subpart N.