

A photograph of an industrial chrome plating facility. The scene shows a large, dark, rectangular tank or structure in the background, with various pipes, chains, and mechanical components in the foreground. The lighting is somewhat dim, typical of an industrial setting. The text is overlaid on a semi-transparent grey box in the center of the image.

# Multi Media Chrome Plating Project

December 2000

**California Environmental Protection Agency**  
**Air Resources Board**  
Compliance Division

# **MULTI MEDIA CHROME PLATING PROJECT**

## **ARB Principal Author**

**Hardip Judge**

Contributing ARB Staff

Steve Eve

## **Cal/EPA Reviewers**

Deborah Barnes, Deputy Secretary for Law Enforcement and Counsel

Lisa Brown, Assistant Counsel for Law Enforcement

## **ARB Reviewers**

Kathleen Walsh, Chief Counsel

James J. Morgester, Chief, Compliance Division

Jorge Fernandez, Chief, Program Assessment and Data Management Branch

## **DTSC Principal Reviewers**

Stephen Lavenger, Rick Robison, Antonia Becker

## **State Water Resources Control Board Reviewer**

John Norton, Chief, Compliance Assurance and Enforcement Unit

## **Acknowledgements:**

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United States Environmental Protection Agency, Region IX  
Department of Toxic Substances Control  
State Water Resources Control Board  
Regional Water Quality Control Board, Santa Ana Region  
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South Coast Air Quality Management District  
Orange County Health Care Agency  
Los Angeles County Fire Department  
City of Los Angeles Bureau of Sanitation  
Los Angeles County Sanitation District  
Orange County Sanitation District

# **Multi Media Chrome Plating Project**

## **INTRODUCTION**

One of California Environmental Protection Agency's (Cal/EPA) goals is to develop coordinated multimedia compliance and enforcement programs. The present project was designed as an attempt to increase the awareness and importance of "multi media" operations among Cal/EPA Boards and local agencies by conducting multi media (air, water, hazardous waste) inspections of chrome platers located in the South Coast Air Basin.

The general objective of the study was to enhance enforcement coordination among Cal/EPA agencies by allowing regulatory personnel (from Cal/EPA and local agencies) to become more conversant with each other's environmental regulations on a practical basis so that cross media referrals can be facilitated. Information generated from the project includes the compliance rate of chrome platers for air, water, and toxics media for a sample population of chrome platers located in Orange and Los Angeles counties. The project also helped to highlight information on the number of regulatory agencies involved in the enforcement of laws related to a simple manufacturing operation such as chrome plating and differences among agencies with respect to staffing, inspection frequencies, and enforcement options.

This project was initiated and coordinated by the Air Resources Board's (ARB) Compliance Division. Agency approval for this project was obtained from Agency Secretary Winston Hickox in July 1999. This report has been drafted by ARB staff and is a consensus report based on input from the Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board (SWRCB). We take this opportunity to thank management and inspection staff from all State and local agencies for participating in this pilot project. These include the South Coast Air Quality Management District, the Certified Unified Program Agencies (CUPAs), Orange County Sanitation District, Regional Water Quality Control Boards (Santa Ana and Los Angeles), and DTSC staff.

Before going into project specifics, we would like to familiarize the readers with the definition of "multi media" and current trends in the practice of this important enforcement concept.

## **WHAT IS MULTI MEDIA?**

Multimedia enforcement uses a coordinated and integrated approach to identify environmental violations, and to develop and implement remedies for them across multiple media or environmental statutes. By encouraging planning, coordination, and communication among different entities throughout the enforcement organization, it broadens the ability of enforcement agencies to respond to the most serious environmental problems and health risks. At the same time, it can reduce the regulatory burden on sources by subjecting them to comprehensive actions instead of multiple activities stretched out over time.

## **WHY MULTI MEDIA?**

Pollution transcends geographic boundaries as well as those of media (air, water, and hazardous waste). Hence, enforcement and compliance assurance strategies and initiatives should reflect the multi media nature of environmental problems. Wherever appropriate, a multi media perspective should be used in targeting, developing, and delivering compliance assistance, conducting inspections, and taking enforcement actions.

## **NATIONAL TRENDS IN MULTI MEDIA OPERATIONS**

In recent years, U.S. EPA has moved to integrate its enforcement of air, water, and hazardous waste regulations. For example, in the past when EPA air compliance inspectors visited a facility, they were not accompanied by water compliance inspectors nor were they looking for potential water pollution violations. With the new policy, EPA has begun to coordinate inspections, with inspectors from different programs forming multi media teams that conduct air, water, and hazardous waste inspections at one time. For example, since 1991, multi media inspections have come to account for almost half of EPA Region 2's inspections. It is EPA's position that multimedia enforcement is integral to its mandate to protect human health and the nation's environment. To promote this program, U.S. EPA has established The Multimedia Enforcement Division in the Office of Enforcement and Compliance Assurance.

## **CALIFORNIA'S POSITION ON MULTI MEDIA**

In California, environmental programs are administered through a large number of state, regional, and local agencies. The structure for each program media (air, water, solid waste, hazardous waste, etc.) is different. Typically, single media inspections have been the norm. In recent years, with the formation of Cal/EPA, there has been some discussion to integrate enforcement strategies. Efforts ranging from proposed co-location of boards and departments to establishment of permit assistance centers (where assistance can be obtained for all media) to availability of additional funding to cross-train inspection personnel indicate a shift towards recognizing the importance of analyzing pollution problems from a multi media perspective. The chrome plating inspection project is significant because it marks the first time in California that a source category has been studied from a multi media perspective in a systematic manner. In the early 1990s some federal facilities were inspected on a multi media basis, but the inspections were not conducted as a group. The only other application of multi media has been in a "strike force" mode where inspectors of different agencies are involved in executing a search warrant type inspection of a known violator.

## **PROJECT DURATION**

This project was initiated by the Air Resources Board in July 1999. Field inspections were for a three week period between November 1999 and February 2000 to determine the

compliance status of a selected number of chrome plating operations in the South Coast Air Basin with respect to air, water and hazardous waste regulations.

## **SELECTION OF SOURCE CATEGORY**

Theoretically, the concept of multi media enforcement can be illustrated by examining almost any type of source category. However, chrome plating operations were selected because they are ideal candidates for multimedia compliance and enforcement programs based on four important criteria.

1. Emissions from these operations involve all three media (air, water and hazardous waste).
2. The type of emissions involved from chrome plating operations makes it necessary to ensure their full compliance. Hexavalent chromium compounds are regulated as toxic air contaminants in California under AB1807 (1983) and federally as hazardous air pollutants under the Clean Air Act Amendments of 1990. Hexavalent chromium is a known carcinogen. This compound is emitted during chrome plating and anodizing operations. Human exposure to hexavalent chromium can generally occur from breathing air in and around the plating area or ingesting water or food from soil near such industrial sites.
3. Most chrome platers are small or medium size businesses and could benefit from the opportunity to meet multiple regulators at the same time and resolve any outstanding compliance issues in the same time frame.
4. Chrome plating operations are usually located in low income areas. Unless compliance rates are improved for this rule category, low income communities situated near these toxic emitters may continue to be disproportionately impacted.

## **PROJECT PREPARATION**

The kick-off meeting for this project was held on August 16, 1999 between representatives of the Air Resources Board (ARB), State Water Resources Control Board (SWRCB), and Department of Toxic Substances Control (DTSC). The purpose of the meeting was to introduce the subject of multi media enforcement to Cal/EPA agencies and obtain their input in developing a detailed outline of the project. A memorandum was subsequently sent from ARB to the SWRCB and DTSC formalizing the issues discussed at the meeting and providing additional information and guidance on the terms of the study and contents of the final report so participants could prepare for the field study and allocate necessary resources. See Attachment A: September 16, 1999 memorandum from James J. Morgester to Kit Davis & John Norton.

During the months of September and October 1999, ARB staff interacted with DTSC, SWRCB, U.S. EPA and the South Coast Air Quality Management District (South Coast AQMD) staff on a frequent basis to finalize project details. A major issue facing the group

was to decide on the number of inspections which should be conducted to determine the compliance rate of chrome platers in this geographic region. In terms of data credibility, the most desirable option required inspections at a large enough number of facilities so that the results could be statistically significant. For the South Coast air basin, this would translate to over 125 sources. Due to resource constraints and practical problems involved in coordinating a large group of inspectors over an extended period of time, this option was not deemed feasible. On the other hand, conducting inspections at too few facilities would not have generated meaningful compliance data.

In the end, a three-week inspection period was selected. In terms of actual inspections, this would translate to about 36 facilities based on three teams operating simultaneously in the field. Project proponents were convinced that data from 36 facilities would serve the objectives of the pilot project and would also provide a good picture of compliance trends within chrome platers.

To standardize and coordinate the inspection process, Cal/EPA staff (ARB and DTSC) acted as team leaders for the three teams (A, B, and C). Each team consisted of a team leader and four inspectors representing local agencies responsible for regulating different media (air, hazardous waste, and water). The water component required two inspectors because pre-treatment and storm water run off are regulated by two different agencies. In addition, an inspector from U.S. EPA Region IX accompanied Team C members on all inspections. Table 1 below gives the make-up of the teams and their area of operation.

Table 1 – Make Up of Inspection Teams

Team	Team Leader	Air	Hazardous Waste	Water Pre-Treatment	Water Storm Water
Team A (City of L.A.)	DTSC	South Coast AQMD	L A County Fire Dept.	City of LA Bureau of Sanitation	RWQCB L A Region
Team B (within LA County but outside Ccity limits)	ARB	South Coast AQMD	L A County Fire Dept.	LA County Sanitation District	RWQCB L A Region
Team C (Orange County)	ARB	South Coast AQMD	Orange County Health Care Agency	Orange County Sanitation District	RWQCB Santa Ana Region

To acquaint team members and local agencies with each other, ARB staff organized a Chrome Plating Cross-Media Inspection Orientation Workshop. This was conducted at the South Coast AQMD’s Diamond Bar office on November 4, 1999. Local agency participants included inspectors from the SCAQMD, Certified Unified Program Agencies, LA Bureau of Sanitation, LA County Sanitation District, Orange County Sanitation District and the LA and Santa Ana Regional Water Quality Control Boards (RWQCB). Representatives from ARB, SWRCB/RWQCB and DTSC provided an overview of the State agencies oversight responsibilities with respect to local agencies. Representatives from the SCAQMD, Los Angeles County Fire Department and Orange County Sanitation District discussed steps involved in a typical inspection of a chrome plater. Participants were also provided written

material pertaining to inspection activities common to each media and a multimedia inspection script to help standardize the inspection process.

During this workshop, participants were also given an opportunity to talk to their team members regarding logistics and other details pertinent to the upcoming inspections. The final selection of facilities was made by team members on a consensus basis. This was based on a master list of chrome platers operating in the South Coast Air Basin which had earlier been distributed to DTSC and SWRCB staff for help in identifying potential target facilities.

## **INSPECTION PROTOCOL**

Due to the size of the inspection team, the potential for facility owner/operators to be alarmed/overwhelmed was very real. Hence (for the most part), team leaders entered the facility first and introduced themselves to the owner/operator and explained the purpose of the pilot project. In each case, consent to conduct the multimedia inspection was obtained from the facility operator.

Before proceeding with the inspection, team leaders gave the owner/operator a description of the areas of interest the team wanted to see during the walk-through inspection and a list of the records which the team wanted to review at the end of the walk-through. See Attachment B: Walk-Through Inspection Outline and Elements of Inspection. In general, the walk-through consisted of inspecting all areas of the plant **as a team** starting from “raw material in” to “finished product out” including all areas related to storage (raw material and waste product) with special emphasis on waste treatment and emissions control. Wherever applicable, samples were collected for subsequent analysis. At the conclusion of the inspection, each inspector gave a report of preliminary findings to the facility operator. The source was also allowed an opportunity to comment on the inspection process and discuss inspection findings with the inspectors. Team members followed appropriate safety precautions. Industrial hygienists from U.S. EPA and DTSC accompanied inspection teams at some sites. See Attachment C for a Health and Safety Guidance Document produced by U.S. EPA relating to inspections at chrome plating facilities. This document was partially based on observations and actual field data collected by EPA’s Industrial Hygienist during four inspections conducted with Team C in Orange County.

## **EMISSION POINTS FOR A TYPICAL CHROME PLATING PROCESS**

Emissions of pollutants from a typical chrome plating operation can enter the air stream (to atmosphere), water stream (to sewer), or can be manifested out as hazardous waste (solid or liquid). Attachment D is a diagram of a typical chrome plating process showing the multiple nature of waste generation points and the regulatory agencies involved. Production operations at most shops involve manufacturing of the part on site (or receiving it from a vendor), surface preparation (mechanical shot blasting, buffing/polishing or chemically dipping it in a degreaser or acid bath), and electrochemical plating (nickel, chromium, copper, etc.). Control of emissions for each media is governed by a complex set of regulations. The paragraphs below give an idea of the rule requirements in a simplistic form.

*Air* - In order to control hexavalent chromium emissions from the chrome plating process, facilities use chemical fume suppressants, mechanical fume suppressants, or add-on air pollution control devices such as scrubbers or HEPA filters.

*Water* – Some facilities have permits for onsite treatment of hazardous waste. These units are used for pH adjustment, destruction of cyanide, precipitation of heavy metals to acceptable levels, and reduction of hexavalent chromium (to the more acceptable trivalent form) before discharging the waste stream into the sewer. A portion of the treated process stream can be recycled back into the plant.

*Hazardous Waste* – This can be generated in solid or liquid form and is required to be stored in closed containers on site before being shipped to a landfill or treatment unit. The facility is required to retain all manifests and comply with State requirements with respect to storage and disposal of generated waste. Examples of waste are dust and shavings from abrasive blasting and polishing operations, and dried cake from filter presses serving the waste treatment unit.

## **FINDINGS**

### **A) Compliance Status of Inspected Facilities:**

A total of 37 chrome plating facilities were inspected on a multi media basis in the South Coast Air Basin. See Attachment E for a summary of the facilities inspected and violations documented in the different media. Violations described include procedural as well as emissions related violation.

- Approximately 43% of the facilities inspected (16/37) violated at least one provision of the regulations governing discharge of all media (i.e., they violated air, water, and hazardous waste regulations).
- Approximately 43% of the facilities inspected (16/37) violated at least one provision of the regulations governing discharge of waste water into the sewer (pre-treatment – Waste Water Ordinance Sec 205).
- Approximately 89% of the facilities inspected (33/37) violated at least one provision of the regulations governing storage and handling of hazardous waste (DTSC/CUPAs – CCR Title 22).
- Approximately 89% of the facilities inspected (33/37) violated at least one provision of the regulations governing hexavalent chromium emissions into the air (South Coast AQMD - Rule 1469).
- Approximately 93% of the facilities inspected (26/28) violated at least one provision of the regulations related to the Storm Water Permit. Due to resource constraints, only 28 of the 37 facilities on the original multi media list were inspected for compliance with this regulation.

Examples of typical violations are given below:

*Air* - Failure to provide initial and ongoing compliance status reports; failure to monitor the surface tension of the chrome plating tank; failure to record chemical fume suppressant additions; exceedances of the surface tension limit; no water flow to the scrubber and no air pollution control device inspection or maintenance records.

*Water – Pre-Treatment*: No secondary containment in the plating areas; perimeter diking eroded; excess wastewater inside containment area and pH monitor not calibrated.

*Storm Water*: Secondary containment not sufficient; Storm Water Pollution Prevention Plan not complete or up to date; storage of uncovered equipment or parts outside; metal shavings on the ground; open trash bins and corroded containers outside.

*Hazardous Waste* - Storing hazardous wastes for more than 90 days; acids/caustics in same bermed area; hazardous waste containers not labeled; no consent for cyanide treatment from DTSC; drag-out from tanks not controlled and treating hazardous wastes without permits.

## B) Regulatory Framework

Even a simple manufacturing operation such as a chrome plater is subject to complex regulations governed by multiple agencies. Chrome platers in the South Coast Air Basin are regulated by several agencies. Attachment F illustrates the primary agencies involved and the corresponding State agencies with oversight authority over the local agencies. At the federal level, U.S. EPA Region IX has the authority to independently conduct inspections and take necessary enforcement action against non-complying facilities.

## C) Frequency of Inspections

The frequency of inspections at chrome platers varies from one agency to another and depends upon agency priorities and staffing levels. To ensure high compliance, we recommend annual inspections at a minimum. There are 207 permitted chrome plating facilities within the South Coast Air Basin. For example, the South Coast AQMD is only able to inspect chrome plating facilities every two to three years. The CUPAs inspect these facilities every two to four years. The two Regional Water Quality Control Boards (LA and Santa Ana Region) only have three inspectors assigned to the Non-Point Source Unit. Hence, the RWQCB can only inspect these type of facilities on a complaint basis. The Sanitation Districts are able to sample waste water discharge on a quarterly basis and some facilities are visited on a monthly basis until full return to compliance.

#### D) Enforcement Options

Regulating agencies vary considerably in their enforcement tools, penalty provisions, and enforcement procedures.

*Air* - The AQMD inspector has the authority to issue on site a notice to comply (NTC) for minor procedural and non-emissions related violations or a notice of violation (NOV) for emissions related violations. A NTC requires the facility to correct the violation with 14 days. Facility operators who receive a NOV are subject to appropriate monetary penalties determined by the District's in-house Mutual Settlement Program. NOVs which cannot be settled in-house are referred to the District Attorney or can be litigated by the District. As a matter of policy, the District verifies a return to compliance before case settlement. By law, issued air permits give the inspector "right of entry" to the facility without prior notice.

*Hazardous Waste* - The CUPAs issue a notice of violation and order to comply (NOV & OTC) for violations discovered during their inspections. The NOV & OTC describe the violation and reference the violation by code section number and provide the facility 30 days to correct the violation. Inspectors follow up with a second inspection to verify a return-to-compliance and will charge the facility for a third inspection if the violation has not been corrected. Usually, there are no monetary penalties associated with the NOV & OTC. CUPAs can refer cases to the City Attorney, District Attorney, or U.S. Attorney (for large corporations) for civil/criminal penalties, or issue an Administrative Enforcement Action (AEA). The AEA is a mechanism to settle administrative penalties through an office conference or by an Administrative Law Judge. It is our understanding that CUPAs have rarely used the AEA mechanism as an enforcement option. CUPA inspectors have "right of entry" to a source through Health and Safety Code Section 25185.

*Water* - The Regional Water Quality Control Boards can issue a notice to comply or a notice of violation. No monetary penalties are assessed if corrections are made within 30 days. For certain violations, Administrative Civil Liability Hearings are held and civil penalties may be associated with such hearings. The Orange County Sanitation District issues corrective action notices for minor violations and NOVs for exceedance of permit limits based on waste water analysis report. Administrative fines (by the Sanitation District) or referrals to the D.A. are typically done only as a means of last resort. If the facility is making a good faith effort to comply, the Sanitation District generally does not impose any penalties but can recover costs associated with sampling of the waste water discharge.

#### E) Feedback on the Multimedia Inspection Process

*From Facility Operators* - Most facility owners/operators appreciated the consolidated inspection approach since all agencies could be addressed at once and in almost the same amount of time required for one media. The operators of some small facilities found it difficult to manage their shop while an inspection was in progress since there was usually nobody else who could tend to other business matters during the inspection. Some owners wanted a team of this size to make an appointment prior to the inspection rather than coming in unannounced.

*From Inspectors* – Most inspectors stated that they benefited from the multi media inspection because of the practical training and opportunity involved in learning about other media during the inspection process. Some inspectors felt hindered by the approach since the owners/operators time was divided among four inspectors. The overall consensus was that cross-media referrals would be enhanced due to the knowledge gained from the consolidated inspections.

F) Referrals Made to Other Agencies

1. As a result of reviewing background information of Brite Plating by Team A, it was decided to defer inspection of this facility until more data was obtained by covert sampling of the waste water discharge from this facility. Results of the sampling by the City of L. A. Bureau of Sanitation revealed multiple exceedances and the facility was finally inspected with a criminal search warrant by the local CUPA.
2. As a result of violations discovered by the multi media teams, the L. A. County Fire Department (local CUPA) has referred three cases to the District Attorney for criminal action. In addition, four cases have been referred to the City Attorney for civil action and administrative enforcement orders have been written against another four facilities.
3. The Regional Water Quality Control Board (Santa Ana Region) has referred one case to the District Attorney for violation of the Storm Water regulations.

## **RECOMMENDATIONS**

1. Even for a simple source category like chrome platers, it was our experience that the complexity of current regulations make it very difficult for one inspector to conduct a facility inspection for all media. Hence, in general, we recommend retaining the current structure of different agencies being responsible for different media.
2. Feed back from participating inspectors towards the multi media format of inspections was very encouraging. We recommend conducting a minimum of one set of inspections (similar to this pilot project) every year on a multi media basis to improve the field experience of inspectors from a multi media perspective. A category suitable for inclusion in future studies is semiconductor manufacturing facilities. Participating inspectors gained practical knowledge from the group inspections and were in a better position to make referrals to other agencies. Project leads could be rotated among the Boards and Departments of Cal/EPA.
3. Staff of State and local agencies should receive training in multi media inspection techniques on a regular basis.
4. Cal/EPA should study the possibility of providing some similarity between the enforcement procedures of different media by modifying statutes or agency policy and procedures. Currently, violations of a similar nature can draw different

enforcement responses depending upon the media and agency involved. This confuses the regulated community and makes some agencies look more “business friendly” while others are thought of as hard to deal with.

5. The overall compliance rate for this source category should be improved by conducting more frequent inspections, compliance assistance activities, and taking appropriate enforcement action against sources found in violation.
6. It is our general experience that gross violators are usually not partial to one media. Violations of multiple media can be expected at these facilities. Hence, if a facility has the potential for multi media emissions, this fact should be taken into consideration while preparing for an enforcement action such as a criminal search warrant. During this project (based upon background research) one facility was recommended by Team A for a search warrant type inspection. However, the warrant was not drafted to include inspection activities by the South Coast AQMD, DTSC, or the RWQCB. Hence, even though the multi media inspection team was invited to go along with the search warrant execution, they could not conduct an independent inspection.

**Attachment A**

**September 16, 1999 Memorandum From James J. Morgester  
To Kit Davis & John Norton**



## Air Resources Board

Alan C. Lloyd, Ph.D.

Chairman

2020 L Street • P.O. Box 2815 • Sacramento, California 95812 • www.arb.ca.gov



### **Winston H. Hickox**

*Secretary for  
Environmental  
Protection*

### **Gray Davis**

Governor

## MEMORANDUM

**TO:** Kit Davis, Chief  
Complaints/Task Force Support Branch  
Department of Toxic Substances Control

John Norton, Chief  
Compliance Assurance and Enforcement Unit  
State Water Resources Control Board

**FROM:** James J. Morgester, Chief  
Compliance Division

**DATE:** September 16, 1999

**SUBJECT:** Multimedia Study of Chrome Platers

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Thank you for participating in the kick-off meeting on multimedia inspection of chrome plating operations. Through this memorandum, I propose to formalize some of the discussion at the August 16, 1999 meeting and to provide additional information and guidance on the terms of the study and contents of the final report so that all participants can prepare for the field study and allocate necessary resources.

1. General Directive – Cal/EPA has requested that this study be conducted in a truly multimedia fashion by obtaining the participation of representatives from appropriate Cal/EPA boards/departments and their local enforcement agencies.
2. Study Objectives - The study objectives are to (1) determine the compliance rate of chrome platers for air, toxics, and water media; (2) initiate appropriate enforcement action for those sources found in violation; (3) identify ways to improve compliance in the source category; and (4) to familiarize Cal/EPA staff with other environmental regulations so that cross media referrals can be facilitated. In general, multimedia enforcement uses a coordinated and integrated approach to identify and correct environmental violations.

By encouraging planning, coordination, and communication among different entities throughout the enforcement organization, Cal/EPA's ability to respond to the most serious environmental problems and health risks will be enhanced. At the same time, the regulatory burden on sources can be reduced by consolidating inspections.

3. Regulated Category – As agreed in the meeting, the field study will be confined to hexavalent chrome plating operations.
4. Inspection Area – We propose to limit the initial study to chrome platers located within the South Coast Air Basin. This basin lies entirely within the jurisdiction of the South Coast Air Quality Management District and covers those portions of the Counties of Los Angeles, Orange, Riverside, and San Bernardino as described in Section 60104 of Title 17 of the California Code of Regulations. The majority of the chrome platers are located in Los Angeles County.
5. Total Number of Sources – Based on the inventory of permitted sources obtained from South Coast AQMD, we have a total of 160 chrome platers operating in the air basin.
6. Number of Sources to be Inspected – The number of sources which should be inspected jointly by the multimedia team should be sufficient to draw conclusions about compliance within the source category. Therefore, the multimedia team should inspect enough sources so that statistically valid results can be obtained. Using standard statistical calculation procedures, ARB staff has determined the number of chrome platers which need to be inspected in the South Coast Air Basin to meet the performance objective of 95, 90, 85, and 80 percent confidence level (with a 5 percent margin of error). This information is presented below in a tabular form to help us decide as a work group the sample size of the target population.

<b>Sample Size Required To Satisfy Specified Performance Objective</b>	
Confidence (that 5% margin of error is achieved)	Sample Size Required
95%	131
90%	122
85%	114
80%	107

Attached is a list of chrome platers (possible sample population) produced with the help of a random number generator. The number of platers inspected on a multimedia basis will depend upon the performance objective selected. For example, if the group decides on a 80 percent confidence level then the first 107 facilities would need to be inspected. If a 95 percent confidence level is desired then the entire list of 131 chrome platers would need to be inspected.

7. Selection of Specific Sources – A master list of chrome platers (total population) in the South Coast Air Basin along with the street address, city, and county is also attached for

your reference. We need to know the following information from you for purposes of planning and logistics.

- a) Total number of sources you want to inspect on a multimedia basis. This will be driven by the performance objective selected.
  - b) Names of sources you do not want to inspect because of current/pending cases against them or for any other reason.
  - c) Names of sources you want to target even though they may not be on the list compiled by the random number generator.
8. Type of Inspection – Inspections performed will be on a multimedia basis. We expect each inspection to be a complete “enforcement” type inspection. All violations, procedural as well as emissions related, should be clearly documented. Samples should be drawn and analyzed, in accordance with board or department policy. To obtain consistency in inspection results, each department should draft an inspection form which should be followed by all department personnel taking part in the inspections. Please send me a copy of your inspection form for our files. An inspection form for “air” regulations is enclosed for your information.
9. Number of Persons per Inspection Team – We would like to limit this to essential personnel. At the last meeting there was some discussion on ways to limit the team size so that we do not crowd the small facilities that we will be inspecting. Any suggestions are welcome and can be discussed in the next meeting. In the interim, I propose a four person team to consist of the following:  
One inspector from local air district.  
One inspector from the Certified Unified Program Agency (CUPA) designated by DTSC.  
One inspector from the Regional Water Quality Control Board (RWQCB).  
One representative from either ARB, DTSC, or SWRCB per team for purposes of coordination and consistency.
10. Number of Teams – To finish the project in a reasonable time, I propose a minimum of three teams operating per day on a five day per week schedule. From our past experience, we estimate a minimum of two inspections can be conducted per day per team.
11. Report Contents – The report will be drafted by representatives from the ARB, DTSC, and the SWRCB and will be a consensus report. Your input is welcome on report contents. At a minimum, the following questions/issues should be addressed. Please let me know if any additional items need to be covered.
- a) Total population and sample size of inspected sources.
  - b) Violations, procedural and emissions related, discovered for each media at sources inspected.
  - c) Date of previous inspection of source for each media.
  - d) Description of problems found at sources for each media.
  - e) Enforceability of existing regulations for each media.
  - f) Need for additional compliance assistance in any media.

- g) Experience of the team members related to the multimedia project.
- h) Feedback from the sources with respect to inspection by more than one agency at the same time.
- i) Need for expanding this study to other areas of the State.
- j) Other source categories suitable for multimedia inspection.
- k) Resolution of notices of violation issued to sources.
- l) Resources and training available to local agencies to inspect this source category.

The report should also include recommendations to improve compliance within the source category.

12. Project Timelines – We want to complete the field work by October 31, 1999. The target date for the report is December 15, 1999.

If you have any policy questions about this project, please contact me at (916) 322-6022. Jorge Fernandez and Hardip Judge of my staff will be contacting you in the near future to arrange a meeting to further discuss the proposal contents and work out the detailed logistics of the inspection process.

Attachments:

cc: Winston H. Hickox  
Secretary for Environmental Protection, Cal/EPA

Michael P. Kenny  
Executive Officer, Air Resources Board

Ed Lowry  
Executive Director, Department of Toxic Substances Control

cc: Walt Pettit  
Executive Director, State Water Resources Control Board

Watson Gin  
Deputy Director of Waste Management Division  
Department of Toxic Substances Control

**Attachment B**

**Walk-Through Inspection Outline  
And Elements of Inspection**

## Walk-Through Inspection

1. Surface Preparation Areas (including solvent tanks, acid cleaning, alkaline cleaning, sandblasting)
2. Plating Process Areas (including plating tanks, rinse tanks, degreasing tanks)
3. Treatment/Recycling Areas (including chemical and physical treatment)
4. Floor Drains
5. Chemical Storage Areas (including hazardous waste storage and raw materials storage areas)
6. All Outside Areas

## Breakdown of Inspection Activities for Each Media

AIR	TOXICS	WATER
<p>Inspect basic equipment (chrome plating tanks).</p> <p><b>Inspect air pollution control device.</b>                      Within tank - foam blanket polyballs                       External - scrubber hepa filters</p> <p><b>Check operating parameters.</b></p> <ul style="list-style-type: none"> <li>- pressure gauge of scrubber</li> <li>- recirculating water in scrubber</li> <li>- foam blanket thickness</li> <li>- amp-hr meter hard wired</li> </ul> <p><b>Collect Sample for Analysis.</b></p> <ul style="list-style-type: none"> <li>- plating solution for surface tension</li> </ul> <p><b>Review records last 2 years)</b></p> <ul style="list-style-type: none"> <li>- operation and maintenance plan</li> <li>- source test records</li> <li>- breakdowns &amp; exceedances</li> <li>- addition of fume suppressant</li> <li>- foam blanket thickness</li> <li>- surface tension of plating solution</li> <li>- amp-hr usage at facility</li> </ul> <p><b>Compliance with special permit conditions.</b></p>	<p><b>Pre-Inspection File Review.</b> (compliance history, activities, permits, or authorizations)</p> <p><b>Obtain consent to inspect.</b></p> <p><b>Interview business to verify scope of hw activities</b> (types of waste, generator size, and whether they recycle or treat)</p> <p><b>Walk-Through: Visually inspect</b> all points of hw generation, recycling, and treatment; areas for satellite accumulation &amp; consolidation .</p> <ul style="list-style-type: none"> <li>-inspect containers and labels; tanks/secondary containment</li> <li>-check emergency equipment</li> <li>-identify potential releases</li> </ul> <p><b>Note any violations and supporting observations.</b></p> <p><b>Take samples/photos, as needed.</b></p> <p><b>Records &amp; Plans:</b> (3 years)</p> <ul style="list-style-type: none"> <li>-manifests/exception reports - waste determinations/tests</li> <li>-self-inspection logs</li> <li>-training plan &amp; records</li> <li>-contingency plan</li> <li>-treatment/recycling records</li> <li>-Biennial report, if LQG</li> <li>-If applicable, SB 14 reports</li> <li>-Waste minimization program</li> </ul> <p><b>If applicable, determine compliance with Consent Agreement (cyanide)/ permits or TP authorizations</b></p>	<p><b>Pre-Inspection</b> file review including permits, self-monitoring reports, previous violations, site layout, sampling locations, etc.</p> <p><b>Schedule</b> inspection date and time.</p> <p><b>At the site:</b> Discuss inspection objectives and scope with facility officials.</p> <p>Conduct visual inspection (influent, effluent, receiving waters, treatment systems, discharge points, storm water conveyance systems, process wastewater conveyance systems, monitoring equipment, inspect outside areas to determine exposure of materials, processes, products, or wastes to storm water, etc.).</p> <p>Review facility records including Storm Water Pollution Prevention Plan, employee training records, inspection records for dry and wet weather, etc.</p> <p>Take photographs and/or samples.</p> <p>Review inspection findings and discuss follow-up procedures.</p> <p><b>Prepare inspection reports.</b></p> <p><b>Determine the need</b> for any enforcement action.</p>

**Note: This is a generic list of tasks. Not all activities need to be performed at every facility.**

**Appendix C**

**Health and Safety Guidance**  
**For**  
**Chromium Electroplating Facilities**  
**By**  
**U.S. EPA Region IX**

# Health & Safety Guidance for EPA Inspection Chromium Electroplating Facilities

Jeff Woodlee, CIH

June 21, 1999

*Hazards in plating operations arise from the nature of the materials routinely handled, many of them highly toxic. Most of the normal hazards of a plating room can be adequately handled by a combination of proper ventilation and personal protective equipment (PPE). The hazards which pose the most likely risk to EPA inspectors are the mists, which can cause respiratory damage, skin rashes, mucus membrane irritation, nasal ulcers and cancer. The common exposure routes are inhalation and skin contact. The major contributors to health effects are primarily chromic acid mists- Cr(VI), nickle (Ni) mists, acid mists (sulfuric, hydrochloric, nitric), alkaline mists (NaOH, KOH, ammonia) and cyanide mists or vapors (NaCN, KCN, CuCN, HCN). Of these the most common airborne contaminants of concern are chromic acid, acid/alkaline mists and hydrogen cyanide.*

Many electroplating operations are elevated above a containment berm because the floors are raised wooden slats covered with rubber mats. Inspectors may encounter wet and elevated surfaces, with the potential for slipping, tripping or falling into or onto corrosive solutions. The hazard potential is high because many caustic baths reside at lower thigh level increasing the potential of partial immersion into caustic solutions.

## **Electroplating**

Electroplating is the electrodeposition of a metal onto a part. The material being treated becomes the cathode in an electroplating solution, or bath. Such baths are almost always aqueous solutions. The inherent hazards other than airborne mists or vapors are due to deteriorating conditions in corrosive and wet environments especially electrical systems.

Chrome plating operations are regarded as one of the most hazardous. Chromium plating baths consist of acid solutions and the primary substance of concern is chromic acid mist which may be inhaled by workers or come in contact with skin. During the plating process, bubbles of hydrogen and oxygen form in the vicinity of the part. As the hydrogen and oxygen bubbles emerge from the solution, they entrain plating solution droplets, carrying them as a mist into the air above the tank. The lower the efficiency of the plating operation, the greater the production of hydrogen and oxygen, and the greater the amounts of acid mist. Though rare, spontaneous explosions/fires have occurred at the surface of these solutions.

Electroplating facilities can vary widely in potential hazards. Airborne hazards can vary significantly from those found in *decorative vs hard chromium* plating shops. Hard chromium plating efficiencies are low and plating times are long. They potentially generate higher Cr(VI) mists. The decorative chrome shop provides services for a variety of surface preparations and chrome plating may be only a small part of their business. Decorative platers can have many

different bath solutions that provide multiple airborne hazards such as Cr(VI) mists, acid/alkaline mists and cyanide mists/vapors. Other operations can include abrasive methods, acid pickling, molten caustic baths, degreasing, alkali cleaning and vapor degreasing

The electroplating operation may not be the most hazardous operation. Operations involving tank cleaning are responsible for deaths due to residual cyanide release by acid cleaners. Tanks with combined rinse waters from alkaline cyanide rinse and chromic acid rinse have developed headspace levels of 20 ppm hydrogen cyanide. Hazardous conditions can arise when materials provided in bulk are spilled, mixed and subsequently cleaned up by an untrained labor force. Decorative platers in California recently placed berms under their active tanks. The berm can be a common spill area for alkaline solutions containing cyanide and acid solutions that together have the potential to release hydrogen cyanide from cyanide salts. Airborne contaminants can arise during refreshing operations when operators are introducing fresh reagents and adjusting current densities.

The Division of Occupational Safety and Health (DOSH), in the state of California identified electroplating as a high-hazard endeavor because of workers' compensation losses and its potential for exposure of workers to toxic substances and extremely serious safety and health hazards. A special emphasis group within DOSH completed 216 inspections throughout the electroplating industry. Violations totaled 1,802, of which 693 were serious. The ratio of violations per inspection was 8.3 and the rate of serious violations was 38.4 percent. A serious violation can be exposure over the Personal Exposure Limit (PEL), death, lack of proper Personal Protective Equipment (PPE) and others.

**BE AWARE! Deteriorating corrosive conditions, deteriorating electrical equipment, wet surfaces, baths at lower thigh level - (if you slip, you can fall in!), raised wooden walkways, watch your appendages, GO SLOW!**

### **Health Effects - Cr(VI)**

Short duration (days-months) low level exposure (below OSHA Ceiling limit of 100ug/M<sup>3</sup> of air) include asthma, ulceration of nasal septum, decreased lung function, nasal mucosa atrophy and epistaxis (nosebleed).

Long (years) duration occupational exposures include lung cancer, dermatitis, respiratory system impairment, skin ulcers, and fibrosis.

Chromic acid is considered a carcinogen by the National Institute of Occupational Safety and Health (NIOSH). One study concluded the latency period for chromium induced lung cancer is greater than 20 years; exposure duration may be as low as two years.

## **Engineering Controls**

Exposure to Cr(VI) can be significantly controlled by the use of engineering controls. Proper use of exhaust ventilation at the source can reduce airborne mist levels. Surface tension foaming agents can further reduce levels. Additionally, covers can greatly reduce emissions. By combining several control strategies it is possible to reduce airborne contaminants to low levels.

Proper controls and documented exposure data can be useful in identifying hazardous conditions.

## **Exposure**

The current NIOSH Recommended Exposure Level (REL) as a Time Weighted Average (TWA) is 1ug/M3 (10 hour TWA).

Information from OSHA suggests plans to lower the PEL from 100ug/M3 to 0.5ug/M3.

Numerous NIOSH investigations from the early 70's to early 90's have found levels above and below OSHA's PEL of 100ug/M3 for Cr(VI) and above and below PEL's for several acid mists. A report by the ATSDR described hard chromium plating levels from a study of 178 workers in 9 chrome plating plants. Air levels averaged 7ug/M3 and ranged from 1 -57 ug/M3 during conditions in 1983.

Our recent site visit to one hard chromium plating operation showed one worker exposure level of 63ug/M3.

Exposure to Cr(VI) is quite variable according to facility, hard vs decorative, bath conditions, location during inspection, ventilation, etc. Multiple exposure conditions can exist for Cr(VI), acid/alkaline mists and cyanide mists or vapors. NIOSH considers all Cr(VI) compounds to be potential occupational carcinogens. NIOSH has not identified thresholds for carcinogens that will protect 100% of the population. NIOSH recommends that **occupational exposures to carcinogens be limited to the lowest feasible concentration.** Since EPA inspectors cannot rely on proper engineering controls to protect themselves from airborne contaminants, the Health and Safety Office is requiring that inspectors have available the option of using respiratory protection during these inspections. The requirement is that each inspector have training in the use of respiratory protection and have proper respirator selection and fit. A respirator use guide is provided for the general case in a table that is available from the Health and Safety Office.

**Spills or splashes** - If a spill or splash occurs, the first recommendation is to use copious amounts of water, remove affected clothing and neutralize with saturated solution of sodium bicarbonate (baking soda).

Skin and eye contact with chemicals should be avoided by the use of appropriate protective equipment. All persons should wear safety glasses with side shields. Face shields, safety

goggles, shields and similar devices provide better protection for the eyes. Protection against skin contact may be obtained by use of gloves, coveralls and other protective devices.

In the event of skin contact, the affected areas should be flushed with water and medical attention should be sought if symptoms persist; in the event of eye contact, the eye(s) should be flushed with water for 15 min and medical attention should be sought whether or not symptoms persist.

**Table 1.**

**Recommended Use of Half-Mask Air Purifying Respirator fitted with combination HEPA/acid gas/organic vapor cartridges**

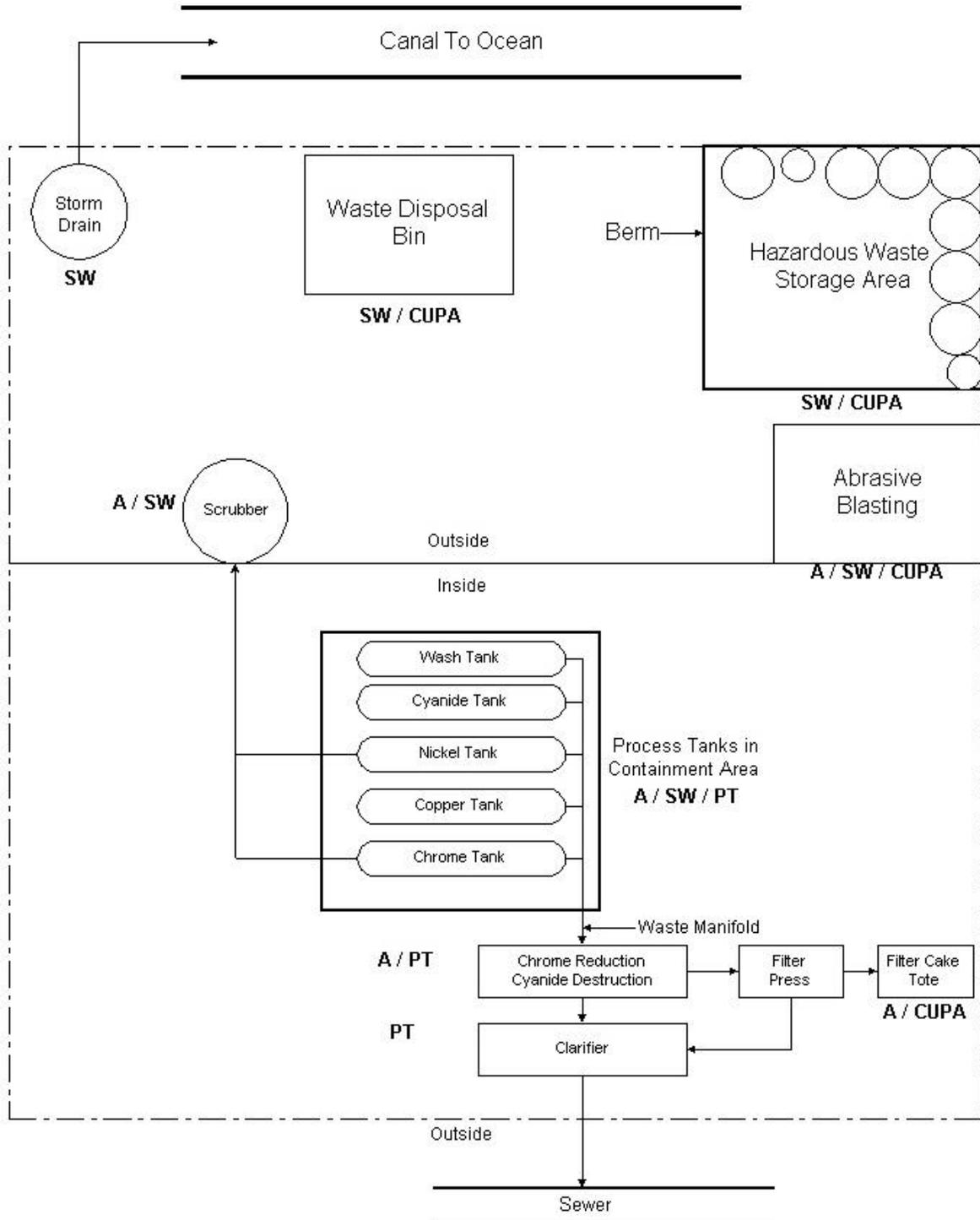
	<b>Strongly Recommended</b>	<b>User Discretion</b>
1- Lack of control exhaust ventilation on baths	X	
2- Lack of dilution or general ventilation		X
3- Poor house keeping / no signs or labels		X
4- Combination of 2 and 3	X	
5- Within 20 ft. Of active electroplating baths	X	
6- Notice mucous membrane irritation or odors	X	
7 - Other areas other than electroplating activities, bath activities		X
8 - Employer provides exposure data for work activity or area		X

**Attachment D**

**Chrome Plating Process  
Showing Waste Generation Points And  
Multimedia Jurisdictions**

## Chrome Plating Process & Waste Generation Multimedia Jurisdictions

(Air = A / Pre-Treatment = PT / Storm Water = SW / Hazardous Materials = CUPA)



**Attachment E**

**Multimedia Chrome Plating Inspection Violations**

**Multimedia Chrome Plating Inspections  
Violations Documented During Week One**

<b>Facility</b>	<b>Air</b>	<b>Water</b>	
<b>California Electroplating</b>	Need flow diagram for automatic & hand plating line (NTC #C56625) No PTO for sludge dryer & nitric acid strip tank; altered PTO by adding a nickel tank & removing gold plating tank (NOV #P14238)	<b>Pre-Treatment:</b> Diluting effluent with make up water (Warning Notice #W-413297) <b>Storm Water:</b> Secondary containment not sufficient Trash bin uncovered Need additional berms Storm Water Prevention Plan review form unavailable	Storing plating tanks for more than 90 days (Class I Violation) Tiered Permit: 1 Violation Category: 1 Disposition: compliance obtained
<b>Chromal Plating</b>	No PTO for chrome tank (NTC #C56626)	<b>Pre-Treatment:</b> O.K. <b>Storm Water:</b> Trash bins open Blast booth shavings on ground Complete Storm Water Prevention Plan	No violations at this facility since all materials are stored in tanks Disposition: No further action
<b>Bronzeway Plating</b>	Compliance status report, daily amp-hr, surface tension and daily powder usage logs not available (NTC #C56624) No PTO for Nickel Plating line, powder spray booth & powder oven (NTC #C56623)	<b>Pre-Treatment:</b> Cyanide & spent plating area not properly bermed Process tank diagram not current Excess wastewater inside containment area Some flows in containment area were not hard piped <b>Storm Water:</b> Outside storage of liquid caustic soda, waste treatment, hazardous waste and pallets needs to be improved.	Damaged/broke with the potent Owners immediate of service at the inspection date repaired. Tiered Permit: 1 Violation Category: 1 Disposition: compliance achieved. No further action
<b>Phylrich International</b>	Surface tension above 45 dynes/cm Surface tension not checked for first 20 days of operation or weekly thereafter Initial compliance plan not submitted (NOV #P14239) Altering Chrome Plating Tank Line Lacquer Strip tank not heated Tanks 3,5,7,9 were permitted as metal tanks but are now plastic tanks (NOV #P14240)	<b>Pre-Treatment:</b> O.K. <b>Storm Water:</b> Uncovered barrels on ground No secondary containment for barrels Oxidized concrete in runoff areas	No permit for this facility (Class I Violation) Storing onsite for more than 90 days (Class I Violation) Hazardous waste not stored correctly No secondary containment for chrome rinse tanks Drag-out from tanks Fire extinguisher not available No DTSC consultation Referral to DTSC (Notice of Violation)
<b>Control Plating</b>	No water to scrubber No flowmeter No records to show PH of circulating water	<b>Pre-Treatment:</b> All waste transfers not logged <b>Storm Water:</b>	Oily liquid in barrels Random storage No labels on 55

Facility	Air	Water	
	<p>is being maintained between 6 &amp; 9 (NOV #P26605)            No PTO for Evaporator (NTC #C59414)</p>	<p>Acid drum outside            Metal shavings on ground            Open fork-lift batteries on ground            Open hydraulic oil container            Open drums on ground</p>	<p>Empty drums w            Empty drums t            No storage rec            Excess debris i            No DTSC con            (Class I Violati            No written ope            Cyanide waste :            (Notice of Viol            Tiered permit: 1            Disposition:            enforcement :            destruction tre            consent agreem</p>
<p><b>Gardena Specialized</b></p> <p><b>Gardena Specialized (Continued)</b></p>	<p>No permits for sulfuric acid/cadmium plating tank lines            Concentration of cyanide before destruction unknown            No initial &amp; ongoing compliance plans            Surface tension not monitored or recorded            Failure to inspect/maintain stalagmometer            No inspection/maintenance records            No records of maskant usage            (NTC #C59416 &amp; NOV #P26606)</p>	<p><b>Pre-Treatment:</b>            Wastewater permit needs renewal due to changes in pretreatment system  <b>Storm Water:</b>            Poor housekeeping in bermed &amp; blast areas            Open drums &amp; corroded containers stored outside            Open trash bin</p>	<p>Commingling baghouse waste            Acids/Caustics (Class I Violati            No label on ace            Reagents store            chemical stora            storage locker            No labels on en            No training doc            No source redu            (Notice of Viol            Tiered Permi            significant por            recycled onsite            CUPA to follo            recycling.</p>
<p><b>Mil-Spec Plating</b></p>	<p>No initial or ongoing compliance plans            No polyballs in hard chrome tank #1            No permits for nickel &amp; copper plating tanks (NTC #C59417)            No water to nickel scrubber            No scrubber inspection/maintenance records (NOV #P26607)</p>	<p><b>Pre-Treatment:</b>            Perimeter diking eroded in plating area  <b>Storm Water:</b>            Corroded drums stored outside            Old pallets stored outside            No monthly visual observation logs</p>	<p>Waste manifest            Tanks omitte            inventory            Reagents store            chemical stora            storage lockers            Storing hazardc</p>
<p><b>Modern Plating</b></p>	<p>No pressure drop or inlet velocity gauges            No scrubber operating &amp; maintenance plan &amp; checklist available            No amp-hr &amp; surface tension records available            Holes in ductwork from tanks to APC            Failure to report performance test results (NTC #C59418 &amp; NOV #P26608)</p>	<p><b>Pre-Treatment:</b>            No secondary containment in cyanide &amp; nickel plating area  <b>Storm Water:</b>            Trash bins uncovered            Metal shavings on ground            Filter cake tote not covered            Empty tanks not covered            Rusty racks stored outside            Employee training records unavailable            Monthly visual observation logs not on-site</p>	<p>Filter cake tote            Portions of s            around cyanid            damaged and b            Drag-out not cc            (Notice of Viol            All Violations :            Tiered Permit: 1            Violation Categ            CUPA to follo            treating cyanide</p>
<p><b>Ultra Wheel</b></p>	<p>Manometer on West Scrubber not working            Permits not posted on all equipment            Permit fee not paid</p>	<p><b>Pre-Treatment:</b>            No violations  <b>Storm Water:</b></p>	<p>Non-Notifier -            without permits            AEO in progres</p>

Facility	Air	Water	
	(NTC # 60803)	Waste Materials and vehicle maintenance work areas are exposed to rain water and run off. Waste material probably discharged to Coyote Creek F.C. Channel (based on sample analysis and photographs)	
<b>Anaheim Plating</b>	Copper and Nickel tanks not properly venting to scrubber Magnehelic gauge on scrubber venting to chrome tank not working Inspection/Maintenance plan for scrubber not submitted (NTC # 57658)	<b>Pre-Treatment:</b> Preliminary Findings do not indicate any violations <b>Storm Water:</b> No site violations observed Annual (storm water) Report not submitted on time	Complete pers maintained on s Hazardous wa available for re Containers not with required d Containers not drums) Source Reducti Plan not prepar Violation Categ All violations c
<b>Embee Plating</b>	Operation/Maintenance Plan not submitted (NTC # 60804) Results from sample of Cr solution for surface tension pending	<b>Pre-Treatment:</b> Preliminary Findings do not indicate any violations <b>Storm Water:</b> No violations observed	Facility appear observed
<b>Del Ray Chrome</b>	Logs not maintained for surface tension or fume suppressant No records of amp-hr usage Operation/Maintenance Plan not filed Permit application to be filed for nickel line and evaporator Produce logs, manifests, MSDS to AQMD (NTC # 60790)	<b>Pre-Treatment:</b> No violations – sewer is sealed, hence no discharge <b>Storm Water:</b> Facility does not have exposure to non-storm water discharge.	Copies of mani Personnel train on site Hazardous W: available for re Containers not Waste” with 1 drums) – Violat

**Multimedia Chrome Plating Inspections  
Violations Documented During Week Two**

Facility	Air	Water	
<b>Model Plating</b>	No records of Dis-Mist additions No surface tension measurements since 11/22/99 Failure to submit initial & ongoing compliance plans	<b>Pre-Treatment:</b> Recent batch treatment records not available <b>Storm Water:</b> No covers on parts and tanks stored outside Some chemicals not listed in site plan	Chemical comp not reported No smoking : treatment area (Notice of Viol

Facility	Air	Water	
	Provide BTU rating of hydrogen bake-out oven for engineering evaluation (Notice To Comply #59427)	Employee training records not available Monthly observation records not available	Tiered Permit: 1 Re-Inspected at Violation Categ
<b>Crown City Plating</b>	No pressure differential gauges on scrubbers Foam blanket thickness not measured on Line #7 (A District Engineer will evaluate the necessity of requiring pressure differential gauges on the scrubbers. The facility was experimenting with the foam blanket & is now measuring it)	<b>Pre-Treatment:</b> No violations <b>Storm Water:</b> No covers on parts racks stored outside Small trash cans uncovered No employee training records	No violations a Tiered Permit: 1 Disposition: considered
<b>Kotoff &amp; Company</b>	Foam blanket thickness not measured Need specifications on nickel strip tanks & BTU rating of boiler for engineering evaluation (NTC #C59428)	<b>Pre-Treatment:</b> PH recorder not calibrated <b>Storm Water:</b> Filter cake drums exposed to storm water No covers for chromic acid drums or pallets Corroded drums stored outside Poor housekeeping Storm Water Pollution Prevention Plan not specific No employee training records	No labels & containers Nickel filters le Poor Housekeep (Notice of Viol Re-inspection c abated Tiered Permit: 1 Violation Categ Disposition: significant. No
<b>Angelus Plating Works</b>	Surface tension not checked daily for 20 days following an exceedance of the standard Foam blanket thickness not recorded No initial & ongoing compliance plans Provide specifications on evaporator for engineering evaluation Need KVA rating of arc welder for engineering evaluation (Notice To Comply #59429)	<b>Pre-Treatment:</b> PH recorder not calibrated <b>Storm Water:</b> Storm Water Pollution Prevention Plan not current Tanks, drums & equipment exposed to storm water Potential exposure of cyclone drum waste to storm water No employee training records	Six (55 gallon) from a chrome and two drum filters (hazard uncovered with One drum of unlabeled. (Notice of Viol Re-inspection abated. Tiered Permit: 1 Violation Categ Disposition: significant. No considered

Facility	Air	Water	
<b>Rubin's Pacesetter</b>	(Notice of Violation #P14245) No permits to operate or construct chrome, nickel & copper plating lines No permits to operate or construct Chrome & Sulfuric Acid Strip Tanks Surface tension of chrome plating tank exceeds 45 dynes/cm No amp/hr meter Not performing surface tension analysis No Compliance Status Report, surface tension records or Notification of Construction submitted for chrome tank	<b>Pre-Treatment:</b> No Violations (no process area sewer connection) <b>Storm Water:</b> No Storm Water Pollution Prevention Plan; No training records Vehicle/equipment, waste management, and material storage areas improperly managed No spill or erosion control implemented Dust/particulate from operations not adequately controlled Non-storm water discharges improperly managed	Disposal of ha several differen on samples coll No local permi LA City Fire D No EPA ID nur Storage greater Several open waste drums No accumula containers No hazardous polishing dust a Hazardous wast No Contingenc Inadequate trair Tiered Permit: ] Violation Categ Disposition: Sa hazardous wast Attorney for vic
<b>Sal's Plating</b>	(Notice to Comply #C56633) No permits to operate for Paint Spray Booth & Drying Oven (Notice of Violation #P14245) Chrome Plating Line altered without authorization Hexavalent chrome emissions uncontrolled Surface tension not measured  Failure to submit Initial Compliance Status Report, prepare & provide Ongoing Compliance Status Report & keep Surface Tension Records.	<b>Pre-Treatment:</b> Pre-treatment system incomplete Process Lay-Out Plan and tank schedule not updated <b>Storm Water:</b> No Storm Water Pollution Prevention Plan No training records Vehicle/equipment, waste management, and material storage areas improperly managed Uncovered drums of materials and hazardous waste outside without secondary containment No spill controls implemented Non-storm water discharges improperly managed	No DTSC Cons Treating hazar permit Treating hexav use of autom reducing agents Storage of haza 90 days (Class No hazardous v Hazardous was poor condition No Contingenc Hazardous was weekly Drag out, spi absorbant in p more than 5 ye Open and unlat No employee tr Failure to main release of hazar Tiered Permit: ] Violation Categ Disposition: Sa for hazardous were also tak Referral to I Attorney for vic
<b>Alco Cad-Nickel Plating</b>	Inspector could not correlate the Permits to Operate with the plating process so the facility is being required to provide a flow chart of the plating process, correct all permit descriptions & submit applications for permits as needed	<b>Pre-Treatment:</b> No Violations <b>Storm Water:</b> No Storm Water Pollution Prevention Plan No training records Vehicle/equipment, waste management &	Recyclable ma by DTSC. PBF Ordered to p separation to p dragout beneath Treating hexav

Facility	Air	Water	
	(NTC #C56632)	material storage areas improperly managed No spill controls implemented Dust/particulate from operations not adequately controlled Non-storm water discharges improperly managed	use of autom reducing agents No Contingenc No employee T Recycling reco at time of ins via mail. Containers of p Minor leaks in : Malfunctioning Using incorrect All violations a Probably opera Violation Cate CUPA will foll source treating
<b>Southwest Plating</b>	(Notice to Comply C56634) Perform surface tension measurements for 20 days & weekly thereafter Log surface tension test measurements Amp/hr meter not hard wired	<b>Pre-Treatment:</b> Poor housekeeping; Improperly labeled process tanks Liquid, sludge & solid debris were collected within the spill containment berms Some plating operations were left out of the Process Unit Operations documentation Experimental plating not documented Unlabeled containers in storage areas Inaccessible storage areas <b>Storm Water:</b> No Storm Water Pollution Prevention Plan No training records Waste management & material storage areas improperly managed Inadequate spill control Non-storm water discharges improperly managed	No DTSC Cons Storing hazarde year (Class I V Evidence of g treatment area. waste disposal This Departme of Closure I contamination DTSC (Cypre: Corrective Act was later refer further investig Tiered Permit: ) Violation Cate DTSC for furth Disposition: ) storage of haza referred to I regarding rem fund and the agreement lette
<b>Kryler Corp</b>	In Compliance	<b>Pre-Treatment:</b> In Compliance <b>Storm Water:</b> Not inspected	Need hazardou sand blasting di No EPA ID # f No hazardous v No hazardous v Hazardous was Hazardous was stored outside s No Source Red Plan available f
<b>Plate Corp</b>	No continuous recorder for amp/hr meter	<b>Pre-Treatment:</b>	Inadequate ais

Facility	Air	Water	
	Records of mist inhibitor additions, HEPA filter maintenance, MSDS for chemicals, sludge dryer manifests or surface tension analysis not available for review. (NTC # 60814 issued 1/19/00)	In Compliance <b>Storm Water:</b> Not inspected	movement of e Class II Violati
<b>DNR Industries</b>	Amp/hr meter not hard wired Amp/hr records for 1999 not available Solvent usage records & VOC content of solvent degreasing compound not available for review (NTC #57665 issued 01/20/00)	<b>Pre-Treatment:</b> In Compliance <b>Storm Water:</b> Not Inspected	No EPA ID # fo Waste oil dru labeled properly Waste grinding a Uniform F (UHWM) & 1 facility (Class I Copy of UHW available for re
<b>Santa Ana Plating</b>	Amp/hr meter not hard wired Records of surface tension analysis & amp/hrs for 1999 not available for review Permits To Operate not posted (NTC #57664 issued 1/20/00)	<b>Pre-Treatment</b> Sample results for local concentration limits not available Facility had a cyanide violation in 11/99 Facility seems to use more water while the District is monitoring their water discharges <b>Storm Water</b> Regional Water Quality Control Board did not accompany team during this inspection	Personnel traini No contingency Hazardous wa properly Source Reduct Plan not availat Copy of DTSC for review – Ill Hazardous wa weekly for leak Hazardous was Facility not ma of hazardous w.
<b>PCA Metal Finishing</b>	In Compliance	<b>Pre-Treatment:</b> In Compliance <b>Storm Water:</b> Not Inspected	In Compliance

**Multimedia Chrome Plating Inspections  
Violations Documented During Week Three**

Facility	Air	Water	
<b>Central Plating</b>	No surface tension measurements for first 20 days of operation No surface tension records after 12/8/99 Surface tension > 45 dynes/cm on 2/15/00 No initial/ongoing compliance plans No PTO for nickel tank (NTC issued 1996) (NTC #59441)	<b>Pre-Treatment:</b> Improve housekeeping around nickel tanks Clean-out clarifier <b>Storm Water:</b> Cover chrome strip tank & trash bin Improve housekeeping of metal shavings Dispose of old drums No Storm Water Pollution Prevention Plan	No labels on e drums in locked Remove old dru Maintain inspe plan Need closure & Tiered Permit: 1 Disposition: enforcement

Facility	Air	Water	
<b>Graybill Metal Polishing</b>	No records of amp-hrs, foam additions, foam blanket thickness or surface tension measurements No PTO for nickel plating line, sulfuric acid tank or chromium strip tank Need control efficiency of fume suppressant, initial & ongoing compliance plans and BTU rating of boiler	<b>Pre-Treatment:</b> Failure to submit 5 year permit renewal Previous cyanide violations PH 6 in cyanide destruction tank No spill log <b>Storm Water:</b> Broken & eroded secondary containment in acid/caustic area No secondary containment in raw materials storage area Remove old equipment, drums & polishing dirt No Storm Water Pollution Prevention Plan	Assurance doc No DTSC Cor (Class I Violati No labels & containers Re-inspection corrected. The reconstructed. hazardous wast Tiered Permit: (Disposition: Al No further enf by the Coun regarding lack letter.
<b>Domar Precision</b>	Submit records for safety kleen solvent tank, solvent usage, amp-hrs, initial & ongoing compliance plans, performance test results, MSDS for MEK & Safety Kleen Solvent Show proof of air flow to scrubber Apply for PTO for chrome strip tank	<b>Pre-Treatment:</b> 5 year permit renewal not submitted since 6/15/95 <b>Storm Water:</b> Dispose of old drums Clean-up metal shavings outside No secondary containment for hydrochloric acid and Safety Kleen Solvent Remove old metal racks Update training & visual observation records	Test or dispose Magnesium hyc No Safety Klee Tiered Permit: (Violation Categ Disposition: A further enforcer
<b>Prime Wheel</b>	No record of amount of sludge processed No inspection/maintenance or initial or ongoing compliance plans No record of surface tension measurements after addition of Fumetrol 140 Provide proof of prevention of dust entrainment from roll-off bins	<b>Pre-Treatment:</b> Update plot plan Remove wash tank line to sample box Provide secondary containment for brightener tank <b>Storm Water:</b> Provide secondary containment for liquid raw material, sludge holding tank & brightener tank Cover filter cake dryer & polishing compound Clean-up metal shavings	No hazardous which contain polishing dust Violation Categ

Facility	Air	Water	
<p><b>Ace Plating</b></p>	<p>(Notice to Comply #C56638)            No Permit To Operate Gold &amp; Silver plating Line, Copper, Brass &amp; Bronze Plating Line &amp; Powder Coating Spray Booth.</p> <p>(Notice of Violation #P14248)            No Permits To Operate Nitric Acid Cleaning Tank &amp; Sodium Hydroxide Cleaning Tank            Chrome Plating Lines were altered without authorization on the two Chrome Plating Tanks, four Nickel Plating Tanks &amp; three Electro-Cleaners</p>	<p><b>Pre-Treatment:</b>            Manufacturing process layout not up-to-date            Several plating tanks without identification            Pretreatment system schematic not up-to-date;            Tank schedule not up-to-date            Pretreatment procedure has been altered, now bypassing first stage of cyanide destruction            Conducting batch treatment without notification            Cyanide plating line, nickel-plating tank, nitric acid cleaning drums and 3 dye process drums were all new source; inspector recommended change in permit category.</p> <p><b>Storm Water:</b>            Storm water permit needs to be updated            Cyanide destruction tank and copper plating tank not within bermed area            Raw materials not covered and bermed            Dumpsters not covered</p>	<p>Disposal of pol            No DTSC Cor            (Class I)            Manual treatme            Cyanide treatr            secondary cont            Storage of haz            (Class I)            No written            treatment syste            No pretreatmen            No waste analy            Waste Minimiz            Inadequate Trai            Open and unlat            waste            Still investigati            Violation Cate            pending laborat            Sample Ar            concentrations            currently bei            concentrations.            District Attorne            Tiered Permit: ]</p>

Facility	Air	Water	
<b>Valley Plating</b>	(Notice to Comply #C56616) Altering two zinc line & hexavalent chrome plating lines without authorization	<b>Pre-Treatment:</b> No violations. <b>Storm Water:</b> No secondary containment for treatment tanks Open container of hazardous waste outside Non-storm water discharges are improperly managed	Disposal of zinc Order to test e tier for treatme effluent No secondary chrome treatme Manually treati Storage > 90 da salt crystals (Cl Sending recycl unauthorized tr Transporting r unregistered ha (Class I) Open/unlabeled Failed to conc hazardous wast Maintain writ closure plan, of Tiered Permit: 0 Disposition: enforcement Assurance docu
<b>Electrolizing</b>	Visible emissions from chrome plating tank corrected during the inspection (Notice to Comply # C56639) No Ongoing Compliance Status Report for the year 1999 Submit an application for chrome stripping line and chrome recovery system	<b>Pre-Treatment:</b> Submit a water balance calculation Submit up-to-date manufacturing process layout and tank schedule <b>Storm Water:</b> No Storm Water Pollution Prevention Plan No training records Vehicle/equipment, waste management & material storage areas improperly managed No spill control implemented	Conducting u under CESQT a No Written 0 treatment of ha Open and unlabeled waste rags by inspection Re-inspected 3/ Tiered Permit: 0 Disposition: No considered by t upgraded to C classification, exempt from m

Facility	Air	Water	
<b>Barry Ave Plating</b>	(Notice of Violation # P14247) No Permit for trivalent chrome plating line, chromic acid anodizing/magnesium plating line, silver/nickel plating line & plating strip tanks (Notice to Comply # C56637) Chromic acid anodizing tank ampere-hour meter was not hard wired No 1999 Ongoing Compliance Status Report No Compliance Status Report for Trivalent Chrome Plating Tank.	<b>Pre-Treatment:</b> No Violations <b>Storm Water:</b> Not inspected	Improper Tiered facility authorized (Class I) No written treatment system No financial assurance as of 5/4/00) No analytical treatment waste No documentation investigations completed Secondary containment waste stream tanks Re-inspected 5/11/00 Tiered Permit: (Class I) Disposition: enforcement Assurance documentation
<b>Grant Piston Rings</b>		<b>Pre-Treatment:</b> In Compliance <b>Storm Water:</b> Not Inspected	Storage containers Hazardous waste Uncovered waste Personnel training Inaccurate Tiered Permit Secondary containment by professional Failure to provide financial assurance & Financial Assurance Violations corrected
<b>S &amp; S Polishing &amp; Plating</b>	Compliance status report & scrubber operation & maintenance plan not available for review Insufficient polyballs on chrome tank surface (NTC #57667 issued 2/17/00)	<b>Pre-Treatment:</b> In Compliance <b>Storm Water:</b> Not Inspected	Unlabeled drums Inaccurate notification & containers for Batch logs & containment inspections Violation Category
<b>Markland Mfg</b>	In Compliance	<b>Pre-Treatment:</b> In Compliance <b>Storm Water:</b> Not Inspected	Personnel training Tank 13 certification No record of management & Treatment units of owner/operator serial number Annual report not Violation Category Violations corrected
<b>Orange County Plating</b>	Amp/hr readings not maintained daily No logs of zero mist additions. (NTC #57668 issued 2/18/00)	<b>Pre-Treatment:</b> In Compliance <b>Storm Water:</b> Not Inspected	Containers not Violation Category

**Attachment F**

**Agencies Responsible for Regulating  
Chrome Plating Operations  
In the South Coast Air Basin**

## Agencies Responsible for Regulating Chrome Plating Operations in the South Coast Air Basin

