UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Dec 06, 2004

In Reply Refer To: WTR-7

Tom Coss, President
Santa Clara Plating Company
1773 Grant Street
Santa Clara, California 95050

Dear Mr. Coss:

Enclosed is the report for EPA's August 6, 2004 compliance evaluation inspection of Santa Clara Plating. We request that you submit a short response to each specific finding in the numbered items 2.0 - 5.0 of this report by January 30, 2005.

The main findings are summarized below:

1 The San Jose/Santa Clara permit has for the most part correctly applied the applicable Federal standards and local limits to Santa Clara Plating. However, the alternate amenable standards for cyanide should be applied and they must be adjusted to account for dilution.

2 The treatment exceeds the performance of the models used in setting the Federal standards primarily because of your extensive water quality testing performed prior to the delivery of all wastewaters for treatment and disposal.

3 At least one potential method of unauthorized bypassing of treatment or the permitted compliance sampling point was found.

We thank you for your cooperation during our inspection. Please send copies of any submittal to the San Jose/Santa Clara as well as to us. If you have any questions, please feel free to contact me at (415) 972-3504 or by e-mail at arthur.greg@epa.gov.

Sincerely yours,

Original signed by:
Greg V. Arthur

Greg V. Arthur, Envr. Engr.
CWA Compliance Office

Enclosure

cc: Jim Komatsu, San Jose/Santa Clara

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User:	Santa Clara Plating 1773 Grant Street, Santa Clara, California 95050-3984 Metal Finishing (40 CFR 433)
Treatment Works:	San Jose/Santa Clara Water Pollution Control Plant (NPDES Permit CA0037842)
Dates of Inspection:	August 6, 2004

Inspection Participants:

US EPA:	Greg V. Arthur, CWA Compliance Office, (415) 972-3504 Meg Masquelier, CWA Compliance Office, (415) 972-3536
RWQCB:	No Representative
City of San Jose:	Jim Komatsu, Industrial Waste Inspector, (408) 945-5478 Jack Dickinson, Industrial Waste Inspector, (408) 945-5472
Santa Clara Plating:	Tim Bevins, Maintenance Manager, (408) 727-9315 Al Becker, Marketing Manager, (408) 727-9315 ext.30. James Burgard, President, Engineering Environetics, (408) 727-4274

Report Prepared By:	Greg V. Arthur, Environmental Engineer October 30, 2004

Section 1

Introduction and Background

1.0 Scope and Purpose

On August 6, 2004, EPA conducted a compliance evaluation inspection of Santa Clara Plating in Santa Clara. The purpose was to ensure compliance with the Federal regulations covering the discharge of non-domestic wastewaters into the sewers. In particular, it was to ensure:

- Classification in the proper Federal categories;
- Application of the correct standards at the correct points;
- Consistent compliance with the standards; and
- Fulfillment of Federal self-monitoring requirements.

Santa Clara Plating is one of 13 significant industrial users ("SIUs") in San Jose/Santa Clara Water Pollution Control Plant service area whose compliance was assessed as part of EPA's 2004 evaluation of the San Jose/Santa Clara pretreatment program. San Jose/Santa Clara received a report prepared by Tetra Tech, the State of California's contractor. The industrial users including Santa Clara Plating received or will receive individual reports from EPA. The inspection participants are listed on the title page. Masquelier conducted the inspection on August 6.

1.1 Process Description

Santa Clara Plating is a job-shop metal finisher operating in the seven connected units of a horseshoe-shaped building on 1700 block of Grant Street in Santa Clara. Santa Clara Plating performs metal finishing mostly on aluminum parts, but also on steel, stainless steel, copper and brass parts, primarily for bicycle manufacturing and for semiconductor, medical, and communications applications.

- Unit 1763 – nitric-acid passivation line (alkaline soak, alkaline electroclean, nitric-acid deactivation, nitric-acid passivation), industrial wastewater treatment

- Unit 1767 – electropolishing line (phosphoric-acid electropolish, nitric-acid descale), nickel plating line (alkaline soak, alkaline electroclean, hydrochloric-acid pickling, nickel-sulfate plating), industrial wastewater treatment

- Unit 1769 – sulfuric-acid anodizing and alodining line (alkaline soak, alkaline etch, nitric-acid deoxidation, chrome conversion alodining, sulfuric-acid anodizing, metal dyeing, nickel-acetate sealing, nitric-acid stripping, teflon seal), racking, staging, quality control laboratory, parts quality inspection, water supply preconditioning

Section 1 – Introduction and Background

- Unit 1775 – warehouse

- Unit1777 – prototype small parts passivation (alkaline soap clean, alkaline cleaning, nitric-acid deactivation, nitric-acid passivation) and nickel-plating line (ultrasonic clean, hydrochloric-acid activation, nickel-chloride plating, watts nickel plating), rack stripping (nitric-acid)

- Unit 1779 – cafeteria

- Unit 1783 – storage

Although Santa Clara Plating has operated on-site for many years, all processing operations are new or rebuilt. The Unit 1769 anodizing and alodining lines were rebuilt after a fire in 1990. The Unit 1763 passivation line was installed in 1994. The Unit 1767 electropolishing and nickel-plating lines were rebuilt in 1992 after the installation of secondary containment. The Unit 1777 prototype lines were installed this year.

1.2 Waste Streams

Spent Solutions - The imparted contamination from the processing of parts and the progressive drop in solution strength usually results in the generation of spent solutions. At Santa Clara Plating, nearly every metals processing step would be expected to generate spent solutions because nearly all of them are followed by drag-out static rinses. Drag-out return to the solutions usually means there are insufficient losses into the rinses to allow for the regeneration of solutions by additions only. Santa Clara Plating reports that all solution spents are hauled off-site for disposal.

Rinses – Santa Clara Plating employs a number of exempliary rinsing practices. First, all rinse tanks that generate wastewaters for discharge are static tanks that are drained and replenished only after on-site water quality testing of the tank contents. This ensures excellent operational control of all spent rinse waters through the Unit 1767 industrial wastewater treatment unit ("IWT") prior to discharge to the sewers. Second, most metals processing steps are followed by first-stage drag-out static rinses used for solution tank make-up. Drag-out rinses extend the useful life of the solutions by returning nearly all solution drag-out to reuse. Third, all rinse waters are DI rinses. DI rinses prevent the build-up of the minerals entrained in the city water, thereby further extending the useful life of the solutions. Fourth, passivation steps following alkaline etching and alkaline electrocleaning following nitric-acid descaling are also preceeded by deactivation rinses to reduce drag-out contamination from one step to the next and thereby also again extending the useful life of the solution baths.

In addition, the passivation line in Unit 1763 does not discharge to the sewers because the rinses are treated by the two smaller IWTs and reused. Only IWT residuals are generated by Unit 1763 operations. Finally, there are no sewer connections from the prototype lines and all Unit 1777 wastewaters are bowsered to the Unit 1767 IWT.

Section 1 – Introduction and Background

Residuals – Santa Clara Plating generates spent ion exchange resins, spent activated carbon, evaporator residuals, and industrial wastewater treatment unit solids.

1.3 Wastewater and Waste Handling

Process wastewaters discharge into the sewers through one identified sewer inlet. All wastewaters discharged to the sewers are treated through the Unit 1767 IWT for disposal through compliance sampling point IWD-1. Spents and treatment unit residuals are all hauled off-site for disposal. See Appendix 1 for a schematic of wastewater handling.

Unit 1767 IWT – Most rinsing wastewaters are received into four 500-gallon reaction tanks in Unit 1767. The tank contents are tested to determine the appropriate batch treatment. Treatment can consist of chromium reduction, metals hydroxide precipitation, polymer flocculation, and settling, depending on the need. The reaction tank decant is tested prior to delivery by portable pump to a lift station that feeds to two final holding tanks in Unit 1769. The subnatant from the reaction tanks is emptied to a sludge holding tank to be fed through a filter press. The filter press filtrate drains to a small holding tank that is also tested. Filtrate is delivered to the two final holding tanks with off-spec filtrate returning to the reaction tanks. Filter press cake is dewatered through a sludge dryer.

Unit 1769 Final Discharge Tanks – The treated wastewaters alternately fill two 1065-gallon holding tanks in Unit 1769 which are again tested prior to discharging through a hard-plumbed line to the process wastewater sewer connection. The discharge line has a quick-connect fitting on a clean-out tee immediately upstream of the sewer connection itself. The final discharge tanks also receive untreated but previously tested rinsing wastewater from other sources. Off-spec tank contents can return to the reaction tanks in Unit 1767. See Photo No.1 below.

Photo No.1 – Discharge Line

Delivery – Wastewaters are delivered to the reaction tanks in Unit 1767 through visually-exposed feeder pipelines installed along the shop walls and outfitted at with a number of quick-connect fittings. The contents of the rinse tanks are delivered into the feeder pipelines

Section 1 – Introduction and Background

using portable pumps and hoses with quick-connect fittings. The hoses appeared to be long enough to extend from any part to any other part of the facility. The feeder pipelines are clearly labeled. Wastewaters delivered directly to the Unit 1769 final discharge tanks are pumped to small lift station sumps for delivery through hard-plumbed lines to the tanks. See Photo Nos. 2 and 3 below.

Photo No.2 – Delivery Hoses

Photo No. 3 – Feeder Pipeline

Unit 1763 Closed-Loop – Spent static rinses from Unit 1763 are treated for reuse. Acidic rinses circulate from a holding tank through activated carbon and ion exchange columns and ultraviolet oxidation back to the holding tank. Alkaline rinses feed through a holding tank and evaporator with the condensate returning to the holding tank and the slurry delivered to the Unit 1767 IWT sludge dryer. The passivation line does not generate spent solutions.

Off-hauling – Unit 1767 IWT sludge dryer solids are hauled off-site to Phillips for disposal as hazardous. Unit 1763 spent carbon and ion exchange columns, and the Unit 1769 water supply preconditioning columns are serviced by Ionics for regeneration off-site. All spent solutions are hauled off-site untreated for disposal.

Section 1 – Introduction and Background

1.4 Wastewater Discharge Permitting

San Jose/Santa Clara issued permit No. SC-029B to Santa Clara Plating authorizing the discharge of process wastewaters to the sewers through one sewer inlet. The sample point is the small sample station tank referred to in this report as IWD-1. The permit sets limits and self-monitoring requirements for IWD-1. The permit also specifies sampling protocols and includes the general provisions of the Santa Clara City Code (§23-1 et seq.) that apply to all non-domestic discharges to the Santa Clara sewers.

Section 2

Sewer Discharge Standards and Limits

Federal categorical pretreatment standards (where they exist), national prohibitions, and the local limits (where they exist) must be applied to the sewered discharges from industrial users. 40 CFR 403.5 and 403.6.

2.0 Summary

The Federal standards for metal finishing and local limits apply to the discharges through IWD-1. The San Jose/Santa Clara permit applied the correct Federal standards and appropriately applied the local limits. The permit did not appropriately apply the Federal standards for cyanide. The application of Federal standards, national prohibitions and local limits was determined through visual inspection. See Appendix 2 for the discharge requirements.

Requirements

- To establish the Federal standards for cyanide, the proportion of the overall discharge from cyanide-bearing waste streams must be determined.

Recommendations

- The alternate standards for amenable cyanide should be applied.

- Baseline monitoring should include arsenic, mercury, molybdenum, and selenium.

2.1 Classification by Federal Point Source Category

Santa Clara Plating qualifies as a metal finisher subject to the new source Federal standards in 40 CFR 433. The Federal standards are self-implementing which means they apply whether or not they are implemented in a local or State permit. The Federal rules also define domestic sewage, non-contact cooling waters and other wastewaters that do not come in contact with the work pieces, to be dilution waters, 40 CFR 403.6(e).

2.2 Local Limits and National Prohibitions

Local limits and the national prohibitions are meant to express the limitations on non-domestic discharges necessary to protect the sewers, treatment plants and their receiving waters from adverse impacts. In particular, they prohibit discharges that can cause the pass-through of pollutants into the receiving waters or into reuse, the operational interference of

Section 2 – Sewer Discharge Standards and Limits

the sewage treatment works, the contamination of the sewage sludge, sewer worker health and safety risks, fire or explosive risks, and corrosive damage to the sewers. The national prohibitions apply nationwide to all non-domestic sewer discharges. The San Jose local limits apply to non-domestic discharges in the San Jose/Santa Clara service area.

2.3 Federal Categorical Pretreatment Standards
Metal Finishing - 40 CFR 433

Applicability - Under 40 CFR 433.10(a), the metal finishing standards apply to the process wastewaters from all of the metal finishing operations because they involve electroplating (nickel), anodizing (sulfuric acid), chemical coating (passivation, alodining, dyeing, sealing), and etching (alkaline etching, deoxidation, pickling, descaling, acid electropolishing). The metal finishing standards "... apply to plants that perform ..." the core operations of electroplating, electroless plating, etching, anodizing, chemical coating, or printed circuit board manufacturing and they extend to other on-site operations, such as cleaning (alkaline soap, electrocleaning, ultrasonic cleaning), associated with metal finishing and specifically listed in 40 CFR 433.10(a). If any of the core operations are performed, the standards apply to discharges from any of the core or associated operations. As a result, the metal finishing standards apply to the entire process-related discharge from Santa Clara Plating to IWD-1.

The Federal job-shop electroplating standards in 40 CFR 413 do not apply. They apply only to existing source job-shop metal finishers that own less than 50% of the parts processed and were in operation in their present configuration before the August 31, 1982 promulgation date of the proposed Federal rule for metal finishing. Santa Clara Plating does own less than 50% of the parts processed. However, under the definitions in 40 CFR 403.3(k), a new process constructed at an existing source after August 31, 1982 is a new source (1) if it entirely replaces a process which caused a discharge from an existing source or (2) if it is substantially independent of the exsting sources on-site. This definition essentially means the new source metal finishing standards in 40 CFR 433 apply to new lines, rebuilt lines, or existing lines converted to do new operations. At Santa Clara Plating, all of the metal finishing lines are either newly installed (Unit 1777 in 2003, Unit 1763 in 1994) or completely rebuilt (Unit 1769 in 1990, Unit 1767 in 1992), after 1982.

Standards - The standards for new sources in 40 CFR 433.17 for the metal finishing wastewater discharges at Santa Clara Plating to the sewers follow below.

New Source ("psns") Standards from 40 CFR 433.17

(in mg/l)	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CN(t)	CN(a)	TTO
Daily-Max	0.11	2.77	3.38	0.69	3.98	0.43	2.61	1.20	0.86	2.13
Month-Avg	0.07	1.71	2.07	0.43	2.38	0.24	1.48	0.65	0.32	-

Basis of the Standards - The new source metal finishing standards were based on a model pretreatment unit that comprises metals precipitation, settling, sludge removal, source control of toxic organics, no discharge of cadmium-bearing wastewaters, and if necessary, cyanide destruction and chromium reduction. The best-available-technology standards were set

Section 2 – Sewer Discharge Standards and Limits

where metal finishers with model treatment operated at a long-term average and variability that achieved a compliance rate of 99% (1 in 100 chance of violation).

Adjustments – Most of the Federal standards at IWD-1 do not have to be adjusted to account for dilution or multiple Federal categories because all of the wastewaters through this compliance sampling point qualify as Federally-regulated under the metal finishing rule. However, under 40 CFR 433.12(c), the cyanide standards must be adjusted to account for dilution from non-cyanide bearing wastestreams (both regulated and unregulated). At Santa Clara Plating, only alodining qualifies as cyanide bearing. As a result, the cyanide standards as applied to IWD-1 must be adjusted proportionally downward to account for dilution from the other wastestreams. EPA estimates the dilution ratio to be around 10:1 based on the rinsing (not drag-out) tank volumes for non-cyanide bearing versus cyanide bearing discharges. Amenable cyanide standards should be applied because alodining solutions have chelated ferro-cyanide which is not amenable to destruction by alkaline chlorination.

Compliance Deadline - New sources were required to comply on the first day of discharge. All discharges were from new sources by 1994.

2.5 Point(s) of Compliance

See section 1.4 for the description of IWD-1. Federal categorical standards apply end-of-process-after-treatment to all Federally-regulated flows at IWD-1. Local limits and national prohibitions apply end-of-pipe to all non-domestic flows from Santa Clara Plating at IWD-1.

2.6 Compliance Sampling

Federal standards are daily-maximums and are comparable to 24-hour composite samples collected either manually or automatically to be representative of the sampling day's operations. At IWD-1, since the Federally-regulated wastewaters discharge in batches, the Federal standards are comparable to grab samples when the batches are discharged. Local limits and the national prohibitions are instantaneous-maximums and are comparable to samples of any length including single grab samples.

2.7 Pollutants of Concern

The permit appropriately advances local limits and self-monitoring requirements for cadmium, chromium, copper, lead, nickel, silver, zinc, toxic organics and total cyanide, since these pollutants either are Federally-regulated or are present and San Jose/Santa Clara is regulated for them by its NPDES permit and the Federal sludge standards. The permit also appropriately advances local limits for pH since the discharges include alkaline, and acidic wastewaters. The permit advances local limits without self-monitoring for antimony, arsenic, beryllium, manganese, mercury, molybdenum, oil & grease, phenol & derivatives, selenium, and xylene. Arsenic, molybdenum, mercury, and selenium may be pollutants of concern.

Section 3

Compliance with Federal Standards

Industrial users must comply with the Federal categorical pretreatment standards that apply to their process wastewater discharges. 40 CFR 403.6(b).

Categorical industrial users must comply with the prohibition against dilution of the Federally-regulated waste streams as a substitute for treatment. 40 CFR 403.6(d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

3.0 Summary

The treatment in-place equals the design and exceeds the performance of the best-available-technology model used in setting the Federal standards. The performance is better because of the extensive water quality testing prior to the delivery, treatment, or disposal of all waste-waters. As a result, Santa Clara Plating consistently complies with the standards for metals and toxic organics, and should do the same for amenable cyanide. There is no evidence of dilution as a substitute for treatment. There is a potential to use of sewer inlets other than IWD-1. See Appendix 3 for a sampling summary for IWD-1.

Requirements

- The detection limits for cyanide must be low enough (<10µg/l) to allow determination of compliance with the adjusted cyanide standards for IWD-1.

- All sewer clean-outs and any other inlets to the discharge line from the final holding tanks must be permanently capped or tagged-out/locked-out.

Recommendations

3.1 Sampling Records

The 2002-2004 sample record for Santa Clara Plating consists of representative sampling from IWD-1 for all of the Federally-regulated pollutants. Self-monitoring is semiannually for metals and cyanide with semiannual self-certifications for toxic organics. San Jose/Santa Clara monitors quarterly for all of these pollutants as well as for toxic organics. All samples

Section 3 – Compliance with Federal Standards

from IWD-1 appear to be usable for determining compliance with the Federal standards. See sections 2.5, 2.6 and 5.0 regarding the use of sample results for IWD-1.

3.2 Compliance at IWD-1

Metals - Consistent compliance with the Federal standards for metals at IWD-1 would be expected because the treatment steps performed in the batch reactor tanks equal in design and exceed in performance the best-available-technology ("BAT") model used in setting the standards. The better performance is the result of the test, batch treat, and test-prior-to-discharge procedures. Sampling confirms this finding. There were no violations of the Federal standards. The averages and calculated 99th% peaks for the Federally-regulated metals are all low enough to result in a negligible <1% chance of exceeding the standards.

Toxic Organics – Consistent compliance with the Federal standard for toxic organics would be expected because none of the regulated toxic organics listed in 40 CFR 433.11(e) were reported in the permit application as present. There were no violations of the Federal standards. The average and calculated 99th% peak for total toxic organics are low enough to result in a negligible <1% chance of exceeding the standard. See Appendix 4 for the list of the regulated toxic organics.

Total Cyanide – The Federal metal finishing standards are significantly more stringent than advanced in the permit, mainly because the cyanide standards apply BAT performance to just cyanide-bearing waste streams. This causes the cyanide standards to adjust downward to account for dilution from non-cyanide bearing flows. As a result, the unsegregated and untreated cyanide-bearing rinses from alodining would not be expected to consistently comply with the adjusted standards for total cyanide at IWD-1. There was one violation of the adjusted monthly-average standard for total cyanide. The average and calculated 99th% peak are 0.022 and 0.064 mg/l total cyanide, which results in a slight 2% statistical chance of violating the adjusted monthly-average standards. There are two mitigating factors against a determination of deficient treatment for cyanide. First, the 2% statistical chance is an estimate because the actual adjustment of the standards depends on the proportion of the total discharge from cyanide-bearing sources. Second, the Federal standards allow the application of the alternate standards for amenable cyanide, and alodining solutions generally contain ferro-cyanide, a chelated form not amenable to cyanide destruction. See Sections 2.0 and 2.4 regarding adjustment of the standards.

3.3 Dilution as a Substitute for Treatment

The Federal standards in 40 CFR 403.6(d) prohibit "dilution as a substitute for treatment" in order to prevent compromising the BAT model treatment with dilute waste streams. In particular, this prohibition applies when samples of a diluted waste stream are found to be below the Federal standards and the apparent compliance is used to justify a discharge without treatment. There are two conditions that need to be established in order to make a determination of non-compliance with the prohibition against dilution as a substitute for

Section 3 – Compliance with Federal Standards

treatment. First, some or all of the Federally-regulated wastewaters must discharge without undergoing BAT model treatment or its equivalent. Second, there must be some form of excess water usage within a Federally-regulated process.

There is no evidence of "dilution as a substitute for treatment" because spents and spent rinses are released for treatment or disposal only after water quality testing.

3.4 Bypass Provision

The Federal standards in 40 CFR 403.17 prohibit the bypassing of any on-site treatment necessary to comply with standards unless the bypass was unavoidable to prevent the loss of life, injury, or property damage, and there were no feasible alternatives. This provision explicitly prohibits bypasses that are the result of a short-sighted lack of back-up equipment for normal downtimes or preventive maintenance. It also explicitly prohibits bypasses that could be prevented through wastewater retention or the procurement of auxiliary equipment. It specifically allows bypasses that do not result in violations of the standards as long as there is prior notice and approval from the sewerage agency or State.

The discharge of process wastewaters through the Unit 1769 final discharge tanks or any inlet to its discharge line would constitute bypassing of treatment necessary to comply. The possibility exists because portable pumps and hoses are used to deliver all wastewaters to the IWTs. There are no built-in preventions designed to preclude the unauthorized delivery of wastewaters to the final discharge line clean-out or the final discharge tanks themselves, thereby bypassing treatment. See Photo Nos. 1 and 2 in Section 1.3 of this report.

Section 4

Compliance with Local Limits and National Prohibitions

All non-domestic wastewater discharges to the sewers must comply with local limits and the national prohibitions. 40 CFR 403.5(a,b,d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

4.0 Summary

The discharges always comply with the local limits. The exempliary rinsing practices, the extensive wastewater quality testing, and the consistent operation of the on-site treatment of all generated wastewaters should continue to result in consistent compliance. See Appendix 3 for a sampling summary for IWD-1.

Requirements

- None.

Recommendations

- None.

4.1 National Objectives

The general pretreatment regulations were promulgated in order to fulfill the national objectives to prevent the introduction of pollutants that:

(1) cause operational interference with sewage treatment or sludge disposal,
(2) pass-through sewage treatment into the receiving waters or sludge,
(3) are in any way incompatible with the sewerage works, or
(4) do not improve the opportunities to recycle municipal wastewaters and sludge.

This evaluation did not include an evaluation of whether achievement of the national objectives in 40 CFR 403.2 have been demonstrated by consistent compliance with the sludge and discharge limits at the San Jose/Santa Clara wastewater treatment plant.

Section 4 – Compliance with Local Limits

4.2 Local Limits for Toxic Metals, and Toxic Organics

All eight samples (100%) complied with the local limits for cadmium, chromium, copper, cyanide, lead, nickel, silver, zinc, and toxic organics. The exempliary rinsing practice make it possible for Santa Clara Plating to test every rinse tank and optimize the delivery of spent rinses to the Unit 1767 IWT and the Unit 1763 closed-loop systems. Excellent rinsing, extensive wastewater quality testing, batch treatment, testing prior to discharge, and closed-loop wastewater reuse ensures compliance and minimizes pollutant loadings to the sewers. Consistent compliance with all local limits would be expected in the future. There were no sample results for arsenic, mercury, selenium, or molybdenum. See Section 2.7 of this report.

4.3 Local Limits for Solvents and
The National Prohibition Against Flammability

Flammability is not expected to be a risk because of the lack of organic solvents in the waste streams.

4.4 Local Limits for pH and
The National Prohibition Against Corrosive Structural Damage

All pH measurements complied with the minimum and maximum local limits for pH. The pH measurements ranged from 6.8 su. to 11.2 su. Testing prior to discharge ensures consistent compliance with the pH limits. As a result, the discharges are not expected to pose a risk of causing corrosive structural damage to the San Jose/Santa Clara sewers.

Section 5

Compliance with Federal Monitoring Requirements

Significant industrial users must self-monitor for all regulated parameters at least twice per year unless the sewerage agency monitors in place of self-monitoring. 40 CFR 403.12(e) & 403.12(g).

Each sample must be representative of the sampling day's operations. Sampling must be representative of the conditions occurring during the reporting period. 40 CFR 403.12(g) & 403.12(h).

5.0 Summary

The sample record for IWD-1 satisfies the Federal minimum requirement for Santa Clara Plating to self-monitor twice per year. The sample record also satisfies the requirement for sampling to representative over the reporting period since there were no intermittent operations not captured by the accumulation through batch treatment, in-house wastewater quality testing and the compliance sampling on any particular day. The only pollutants of concern not evident in the sample record are arsenic, mercury, selenium, and molybdenum.

The Federal standards allow self-certifications twice per year instead of self-monitoring at IWD-1 for total toxic organics with the submittal of a toxic organics management plan ("TOMP") under 40 CFR 433.12. The TOMP should state that there is no opportunity for toxic organics to be discharged because they are not used on-site, or are physically separated from the sewer system. The TOMP could apply to most but not all of the Federally-regulated toxic organics, thereby limiting the twice-per-year self-monitoring requirement to just those toxic organics present. See Appendix 4 for a list of the Federally-regulated toxic organics.

Requirements

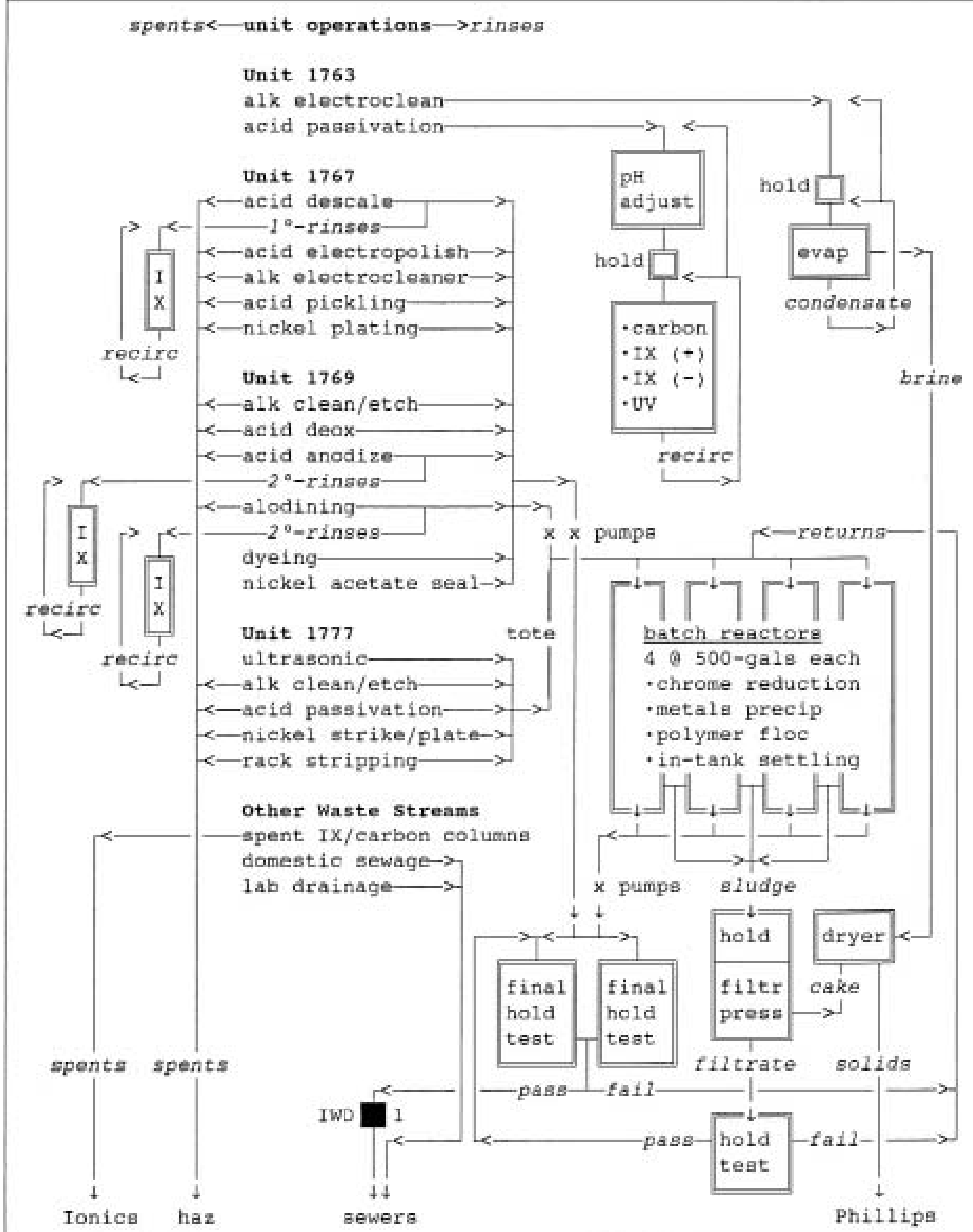
- None.

Recommendations

- None.

Appendix 1

Santa Clara Plating, Santa Clara, California
Schematic of the Wastewater Collection and Treatment



Appendix 2

Clean Water Act Requirements - Santa Clara Plating, Santa Clara
Sample Station Tank @ IWD-1

Specific Numeric Limits (mg/l)	Fed Cat Stds d-max	Fed Cat Stds mo-avg	Nat'l Prohib inst	a/ Local Limits inst	Local Limits d-max	Local Limits yr-avg
antimony	-	-	-	5.0	-	-
arsenic	-	-	-	1.0	-	-
beryllium	-	-	-	0.75	-	-
cadmium	0.11	0.07	-	0.7	-	-
chromium	2.77	1.71	-	1.0	-	-
copper	3.38	2.07	-	2.7	1.0	0.4
lead	0.69	0.43	-	0.4	-	-
manganese	-	-	-	35.0	-	-
mercury	-	-	-	0.010	-	-
nickel	3.98	2.38	-	2.6	1.1	0.5
selenium	-	-	-	2.0	-	-
silver	0.43	0.24	-	0.7	-	-
zinc	2.61	1.48	-	2.6	-	-
cyanide-total	0.109b/	0.059b/	-	1.0	-	-
cyanide-amenable	0.078b/	0.029b/	-	0.5	-	-
oil+grease	-	-	-	150.	-	-
phenol & derivatives	-	-	-	30.0	-	-
xylene	-	-	-	1.5	-	-
total toxic organics	2.13 c/		-	2.13	-	-
pH min (s.u.)	-	-	5.0	6.0	-	-
pH max (s.u.)	-	-	-	12.5	-	-
closed cup flashpoint	-	-	≥140°F	-	-	-
Regulatory Citation	40 CFR 433.17		40 CFR 403.5	Santa Clara City Code Chapter 23.1 et.seq.		

a/ National prohibitions and Santa Clara local limits also include narrative prohibitions against pass-through, interference, obstruction, sludge contamination, toxic gases/fumes, fire/explosion hazard, or causing heat >104°F at the municipal wastewater treatment plant

b/ Adjusted to account for dilution from non-cyanide bearing flows based on total and alodine rinsing tank volumes (not including drag-outs).

$V_{alodine}$ = 204 gal V_{total} = 2240 gal
$Q_{cyanide}$ = 0.09 Q_{total}

c/ See Appendix 4 for the list of toxic organic from 40 CFR 433.11(e).

Appendix 3

Discharge Quality at IWD-1
Santa Clara Plating, Santa Clara

Pollutants (µg/l)	Jul-2002 to Jun-2004 Mean	99th%	Max	Fed Viols a/ DMax	MoAv	Local Viols Inst	DMax	YrAv	Sample Count
arsenic			-			0/0			0
cadmium	<2	<2	<2	0/8	0/8	0/8			8
chromium	76	207	154	0/8	0/8	0/8			8
copper	136	370	350	0/8	0/8	0/8	0/8	0/3	8
cyanide	22	64	60	0/7	1/7	0/7			7
lead	6	16	15	0/8	0/8	0/8			8
mercury			-			0/0			0
molybdenum			-			0/0			0
nickel	121	386	342	0/8	0/8	0/8	0/8	0/3	8
selenium			-			0/0			0
silver	<5	<5	<5	0/6	0/6	0/6			6
tox organics	20	101	142	0/4		0/4			4
zinc	111	342	297	0/8	0/8	0/8			8
(mg/l)	Mean	99th%	Max	DMax	MoAv	Inst	DMax	YrAv	Count
oil & grease			-			0/0			0
TDS			-			0/0			0
pH	9.2-med	6.8 to 11.2				0/8			8

a/ Violations @ Santa Clara Plating (Jul-2002 to Jun-2004)
Averages based on all results over the period even if only one result

Date	Sampler	Type	Fed Standards (mg/l)		Violation	Days
Sep 2002	SCPlate	grab	CN mo-avg	0.059	0.060	30

Computed Statistical Probability of Violation

limits	mean	std dev	probability	percent
Fed-CN mo-avg	μ = 22.2	σ = 17.9	α(59.2) = 0.0194	2%

Appendix 4

Definition of Total Toxic Organics - 40 CFR 433.11(e)

Total toxic organics is the summation of all quantifiable values greater than 0.010 mg/l for the following toxic organics:

acenaphthene	4-chlorophenyl phenyl ether	chrysene
acrolein	4-bromophenyl phenyl ether	acenaphthylene
acrylonitrile	bis(2-chloroisopropyl) ether	anthracene
benzene	bis(2-chloroethoxy) methane	1,12-benzoperylene
benzidine	methylene chloride	fluorene
carbon tetrachloride	methyl chloride	phenanthrene
chlorobenzene	methyl bromide	1,2,5,6-dibenzanthracene
1,2,4-trichlorobenzene	bromoform	indeno(1,2,3-cd)pyrene
hexachlorobenzene	dichlorobromomethane	pyrene
1,2-dichloroethane	chlorodibromomethane	tetrachloroethylene
1,1,1-trichloroethane	hexachlorobutadiene	toluene
hexachloroethane	hexachlorocyclopentadiene	trichloroethylene
1,1-dichloroethane	isophorone	vinyl chloride
1,1,2-trichloroethane	naphthalene	aldrin
1,1,2,2-tetrachloroethane	nitrobenzene	dieldrin
chloroethane	2-nitrophenol	chlordane
bis(2-chloroethyl)ether	4-nitrophenol	4,4-DDT
2-chloroethyl vinyl ether	2,4-dinitrophenol	4,4-DDE
2-chloronaphthalene	4,6-dinitro-o-cresol	4,4-DDD
2,4,6-trichlorophenol	n-nitrosodimethylamine	alpha-endosulfan
parachlorometa cresol	n-nitrosodiphenylamine	beta-endosulfan
chloroform	n-nitrosodi-n-propylamine	endosulfan sulfate
2-chlorophenol	pentachlorophenol	endrin
1,2-dichlorobenzene	phenol	endrin aldehyde
1,3-dichlorobenzene	bis(2-ethylhexyl) phthalate	heptachlor
1,4-dichlorobenzene	butyl benzyl phthalate	heptachlor epoxide
3,3-dichlorobenzidine	di-n-butyl phthalate	alpha-BHC a/
1,1-dichloroethylene	di-n-octyl phthalate	beta-BHC
1,2-trans-dichloroethylene	diethyl phthalate	gamma-BHC
2,4-dichlorophenol	dimethyl phthalate	delta-BHC
1,2-dichloropropane	1,2-benzanthracene	PCB-1242 b/
1,3-dichloropropylene	benzo(a)pyrene	PCB-1254
2,4-dimethylphenol	3,4-benzofluoranthene	PCB-1221
2,4-dinitrotoluene	11,12-benzofluoranthene	PCB-1232
2,6-dinitrotoluene		PCB-1248
1,2-diphenylhydrazine		PCB-1260
ethylbenzene		PCB-1016
fluoranthene		Toxaphene
		2,3,7,8-tetrachlorodibenzo-p-dioxin

a/ hexachlorocyclohexane b/ polychlorinated biphenyls