



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

January 12, 2009

In Reply Refer To: WTR-7

Matthew Cullen, Director of Operations  
Valley Plating Works  
2701 San Fernando Road  
Los Angeles, California 90065

**Re: September 9, 2008 Clean Water Act Inspection**

Dear Mr. Cullen:

Enclosed is the January 12, 2009 report for our September 9, 2008 inspection of Valley Plating Works. Please submit a short response to the findings in Sections 2 through 5, to EPA, the City of Los Angeles, and the Regional Water Quality Control Board, by **February 28, 2009**.

The main findings are summarized below:

- 1 Valley Plating Works qualifies as an existing source job-shop metal finisher regulated under the Federal regulations in 40 CFR 413 for dischargers of over 10,000 gpd.
- 2 On-site treatment is equivalent to the models used in setting the Federal standards. Certain aspects of the design and built-in controls improve reliability and performance, most notably full treatment of all flows, large capacity Lamella clarification, segregated treatment by strength and chemistry, and wide spread on-demand rinsing. As a result, Valley Plating Works has consistently complied with the Federal standards.
- 3 The monthly self-monitoring is representative over the sampling day and reporting period. The monitoring frequencies for some of the permit limited pollutants could be reduced. However, the pH of the overall discharge should be continuously monitored.

I appreciate your helpfulness extended to me during this inspection. I remain available to the City of Los Angeles, and to you to assist in any way. Please do not hesitate to call me at (415) 972-3504 or e-mail at [arthur.greg@epa.gov](mailto:arthur.greg@epa.gov).

Sincerely,

Greg V. Arthur  
CWA Compliance Office

Enclosure

cc: Bellete Yohannes, Senior Inspector, City of Los Angeles  
David Hung, RWQCB-Los Angeles



**U.S. ENVIRONMENTAL PROTECTION AGENCY**

**REGION 9**

**CLEAN WATER ACT COMPLIANCE OFFICE**

**NPDES COMPLIANCE EVALUATION INSPECTION REPORT**

Industrial User: Valley Plating Works  
2701 San Fernando Road, Los Angeles, California 90065  
Existing Source Job Shop Metal Finishing Discharging >10,000 gpd  
(40 CFR 413 Subparts A and E)

Treatment Works: City of Los Angeles  
Hyperion Wastewater Treatment Plant  
NPDES Permit CA0109991 - California WDRs R4-2005-0020)

Pretreatment Program: City of Los Angeles, Bureau of Sanitation

Date of Inspection: September 9, 2008

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Inspection Participants:

US EPA: Greg V. Arthur, Region 9, CWA Compliance Office, (415) 972-3504  
Howard Kahan, Region 9, Los Angeles Office

RWQCB-Los Angeles: None

City of Los Angeles: Bellete Yohannes, Senior Inspector, (323) 342-6046  
Mike Lee, Inspector, (323) 342-6187  
Truc Ngo, Inspector, (323) 342-6182

Valley Plating Works: Matthew Cullen, Director of Operations, (323) 838-9208, ext 343  
John Cullen, Owner  
Luis Guzman, Plant Manager  
Bernard Moore, Consultant, (818) 709-7967

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Report Prepared By: Greg V. Arthur, Environmental Engineer  
January 12, 2009



## 1.0 Scope and Purpose

On September 9, 2008, EPA and the City of Los Angeles conducted a compliance evaluation inspection of Valley Plating Works in Los Angeles, California. 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 sampling points;
- Consistent compliance with the standards; and
- Fulfillment of Federal self-monitoring requirements.

Valley Plating Works is a significant industrial user (“SIU”) within sewer service areas administered by the City of Los Angeles whose compliance was assessed as part of an on-going EPA evaluation of industrial users in EPA Region 9 by sector. The inspection participants are listed on the title page. Arthur conducted the inspection.

## 1.1 Process Description

Valley Plating Works is job-shop zinc and nickel/chrome metal finisher of automotive and motorcycle parts, architectural parts, and plumbing fixtures, made primarily of steel and brass. The operations involve six separate metal finishing lines, of which five were installed in the 1960’s and one in 1981. Two of the plating lines are automatic raceways where the parts are processed through each of the steps using an automatic overhead conveyor system. These lines are designated in this report as Lines A through F.

- Small Automatic Chrome Plating Line A – alkaline clean (NaOH), pickling ( $H_2SO_4/NH_4HF_2$ ), electroclean (NaOH/ $Na_2SiO_3$ ), bright nickel plating ( $NiSO_4/NiCl_3/H_3BO_3$ ), chrome plating ( $CrO_3$ ).
- Rack Zinc Plating Line B – alkaline clean (NaOH), electroclean (NaOH/ $Na_2SiO_3$ ), pickling (HCl), alkaline zinc plating (caustic), blue chromate ( $CrO_3/HNO_3$ ), yellow chromate ( $CrO_3$ ).
- Barrel Plating Line C – alkaline clean/soak (NaOH), electroclean (NaOH/ $Na_2SiO_3$ ), pickling ( $H_2SO_4$ ), bright nickel plating ( $NiSO_4/NiCl_3/H_3BO_3$ ), acid zinc plating (chloride), blue chromate ( $CrO_3/HNO_3$ ), yellow chromate ( $CrO_3$ ), black chromate ( $CrO_3/silver$ ).
- Hand Plating Line D – nickel strip (NaOH), rack strip ( $H_2SO_4/CuSO_4$ ), cleaner (NaOH/rochelle salts), electroclean (NaOH/ $Na_2SiO_3$ ), acid desmut ( $H_2SO_4$ ), tri-acid activator ( $H_2SO_4/NH_4HF_2/HCl$ ).
- Large Automatic Chrome Plating Line E – alkaline clean (NaOH), pickling ( $H_2SO_4/NH_4HF_2$ ), electroclean (NaOH/ $Na_2SiO_3$ ), bright nickel plating ( $NiSO_4/NiCl_3/H_3BO_3$ ), chrome plating ( $CrO_3$ ).
- Stripping Line F – alkaline clean (NaOH), pickling ( $H_2SO_4/NH_4HF_2$ ), electroclean (NaOH/ $Na_2SiO_3$ ), bright nickel plating ( $NiSO_4/NiCl_3/H_3BO_3$ ), chrome plating ( $CrO_3$ ).

Line E and Line F are housed in a separate building across San Fernando Road from the other lines and the wastewater treatment system. Line E and Line F were not in operation on the day of this inspection but they were maintained operable. *See* Figure 1 on page 15 for a



schematic of the configuration and layout of wastewater handling. Also see Table 1 on pages 16 and 17 for a process tank inventory. Photo documentation of this inspection follows in Section 1.7 on pages 5 and 6.

## 1.2 Facility SIC Code

Valley Plating Works is assigned the SIC code for coating and engraving (SIC 3479).

## 1.3 Facility Wastewater Sources

Spent Solutions - The imparted contamination from the processing of parts and the progressive drop in solution strength results in the generation of spents. The generation rates depend on bath usage, effectiveness of bath contamination control, and the amount of drag-out lost into the rinses or to the floor. Valley Plating Works indicated that the nickel plating, chrome plating, and chromate coating solutions are regenerated strictly through additions and thus do not generate spents. The only losses from these "adds-only" solution tanks therefore would be through the drag-out into the rinses or onto the floor. Otherwise, these solution tanks without outlets would foul through contamination or fail through use. All other spent solutions are handled on-site through batch treatment for discharge to the sewers.

Rinses - Valley Plating Works primarily employs first-stage on-demand overflow rinsing but also follows a few processing steps with drag-out static rinses or further rinsing stages. The wastewaters are segregated into chrome and non-chrome bearing for separate handling. Drag-outs following the chromium plating, nickel plating, and acid pickling are returned to the solution tanks as make-up. The remaining rinses undergo treatment prior to discharge.

Residuals - Valley Plating Works generates spent industrial wastewater treatment sludges, and diatomaceous earth filter spents for off-site disposal as hazardous.

## 1.4 Facility Process Wastewater Handling

Discharge - Valley Plating Works discharges non-domestic wastewaters to the City of Los Angeles domestic sewers through a single connection designated in this report by permit number as IWD-427866. Domestic sewage discharges through separate connections downstream of the industrial connection. The August 8, 2006 City of Los Angeles permit identifies the final discharge point as the secured sampling facility after the Lamella clarifier. The permit lists the average discharge to the sewers to be 48,353 gallons per day ("gpd"). See Figure 1 on page 15 for a schematic of the configuration and lay-out of the wastewater handling. See Photo #12 in Section 1.7 of this report on page 6.

Composition - The process-related wastewaters listed in section 1.3 above would be expected to contain copper, chromium, lead, nickel, silver, zinc, acidity, salts, and chelating agents, as well as surfactants, other pollutants cleaned off of parts, and the minerals entrained in the water supply.



Delivery - Most wastewaters are delivered primarily by hard-piping and flexible hosing from the sources to pump stations to an industrial wastewater treatment plant for discharge to the sewers. The rinses drain by gravity to the lift sources while spent solutions are delivered by portable pump to various flexible hose inlets into standpipes leading to the batch treatment. Lines E and F are delivered by pump station from a building across the street through a pipe gallery under San Fernando Road to the industrial wastewater treatment plant. *See* Photos #1 through #7 in Section 1.7 on pages 5 and 6 of this report.

Treatment - Valley Plating Works provides segregated treatment for rinses and non-chrome bearing spents of various chemical compositions for discharge to the sewers. All wastewaters eventually undergo final metals precipitation and settling through 1000 gallon equalization, pH adjustment to 9.0 - 10.0 s.u., and a large well-sized Lamella clarifier. The final pH adjusted contents are pumped from a lift station to the Lamella clarifier for discharge to the sewers. *See* Figure 1 on page 15 of this report. *Also* see Section 3.2 of this report on page 10 and Photos #9 and #10 in Section 1.7 on page 6 of this report.

Two waste streams undergo pretreatment prior to final metals precipitation and settling. First, non-chrome bearing spent solutions are pumped into two large batch treatment tanks (7,000 and 6,300 gallons, respectively) for chemical pretreatment and testing prior to release into the final treatment line. The batch treatment involves neutralization, metals precipitation, and testing for reaction end points prior to release. The pretreated spent solutions are not directed through the filter press for return of the filtrate for treatment, but rather feed into the final metals precipitation and settling line. It is not clear that pretreated spent solutions are metered for release. Second, chrome-bearing rinses are pretreated through equalization and chromium reduction prior to release into the final metals precipitation and settling line. The chrome reduction step is metered for both ORP and pH, with the measurements observed during this inspection to be within the target set-points for the reaction end-points.

Nickel plating solutions circulate through diatomaceous earth filtration. Clarifier sludges are filter pressed and dried. *See* Photos #8 and #11 in Section 1.7 on page 6 of this report.

## 1.5 Sampling Record

Valley Plating Works self-monitors monthly as required by the City of Los Angeles permit. The City of Los Angeles also collects its own samples quarterly.

## 1.6 POTW Legal Authorities

City of Los Angeles - The Bureau of Sanitation administers the pretreatment program in the City areas serviced by the regional Hyperion system. The Hyperion wastewater treatment plant operates under the requirements of the State of California, Los Angeles RWQCB's Waste Discharge Requirements, No. R4-2005-0020, issued in 2005. The WDRs, which also function as NPDES permit No. CA0109991, require the implementation of an approved pretreatment program throughout the sewer service area. Under this authority, the City issued permit No.W-427866 authorizing discharge of non-domestic wastewater to the sewers.



## 1.7 Photo Documentation

Twelve of the 17 photographs taken during this inspection are depicted below and saved as *valleyplating-01.jpg* through *-17.jpg*.

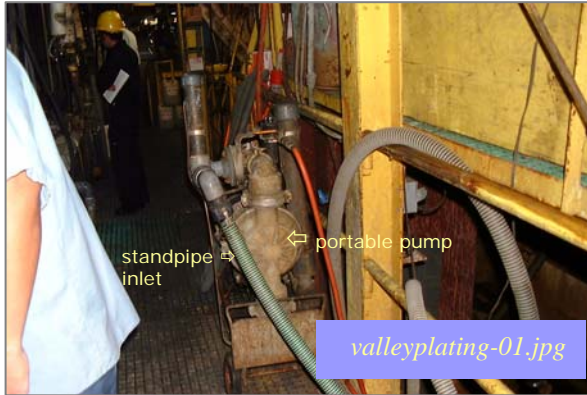


Photo #1: Line A - Portable Pump to Standpipe  
Taken By: Greg V. Arthur  
Date: 09/09/08



Photo #2: Line C - Portable Pump to Standpipe  
Taken By: Greg V. Arthur  
Date: 09/09/08

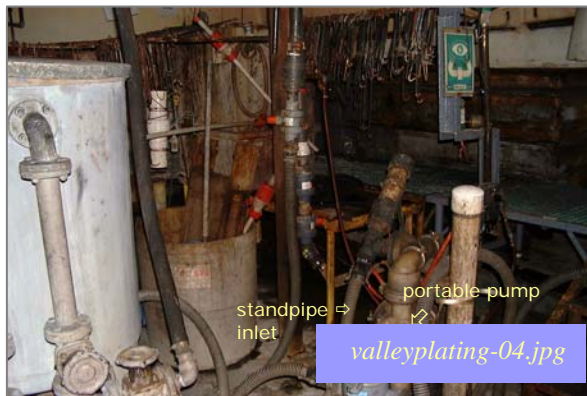


Photo #3: Line D - Portable Pump to Standpipe  
Taken By: Greg V. Arthur  
Date: 09/09/08

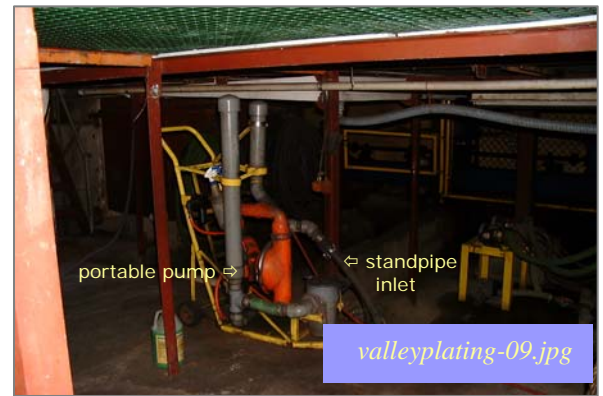


Photo #4: Line E - Portable Pump to Standpipe  
Taken By: Greg V. Arthur  
Date: 09/09/08



Photo #5: Pump Station for General Rinses  
Taken By: Greg V. Arthur  
Date: 09/09/08



Photo #6: Pump Station for Chrome-Bearing Rinses  
Taken By: Greg V. Arthur  
Date: 09/09/08



Photo #7: Lines E / F - Pump Station for Rinses  
Taken By: Greg V. Arthur  
Date: 09/09/08



Photo #8: Line A - Nickel Solution Filter  
Taken By: Greg V. Arthur  
Date: 09/09/08



Photo #9: IWTP - Metals Precipitation  
Taken By: Greg V. Arthur  
Date: 09/09/08



Photo #10: IWTP - Top of the Lamella Clarifier  
Taken By: Greg V. Arthur  
Date: 09/09/08



Photo #11: Rotating Sludge Dryer  
Taken By: Greg V. Arthur  
Date: 09/09/08



Photo #12: Final City of LA Sample Point  
Taken By: Greg V. Arthur  
Date: 09/09/08



## 2.0 Sewer Discharge Standards and Limits

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

### **Summary**

The Federal standards in 40 CFR 413 for existing source job-shop metal finisher discharging more than 10,000 gpd apply to all process wastewater discharges from Valley Plating Works through IWD-427866. The City of Los Angeles permit correctly advances the application of the Federal standards and local limits. The application of Federal standards, national prohibitions, and local limits was determined through visual inspection. *See* Table 2 on page 18 of this report for the permit limits.

### **Requirements**

- None.

### **Recommendations**

- None.

## 2.1 Classification by Federal Point Source Category

Valley Plating Works qualifies as a job-shop metal finisher subject to the Federal job-shop electroplating standards in 40 CFR 413 Subparts A and E for existing sources.

New or Existing Sources - Valley Plating Works does not qualify as a new source since all metal finishing lines were installed before 1981. Under the definitions in 40 CFR 403.3(k), a process constructed at an existing source metal finisher after August 31, 1982 is a new source (1) if it entirely replaces a process which caused a discharge or (2) if it is substantially independent of the existing sources on-site. This means that after the 1982 deadline, the new source standards apply to the original installation of metal finishing lines, lines converted to do new operations, and rebuilt or moved lines, including those relocated and re-installed during the installation of secondary containment. New source standards do not apply to the piecemeal replacement of tanks for maintenance in otherwise intact metal finishing lines, nor do they apply to upgraded treatment without altering production lines.

## 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 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 City of Los Angeles local limits apply to non-domestic discharges in the Hyperion service area.

**2.3 Federal Categorical Pretreatment Standards  
Existing Source Job-Shop Electroplating >10,000 gpd - 40 CFR 413 Subparts A and E**

40 CFR 413 >10k gpd	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CNt	TTO	TM
daily-maximum (mg/l)	1.2	7.0	4.5	0.6	4.1	-	4.2	1.9	2.13	10.5
four-day average (mg/l)	0.7	4.0	2.7	0.4	2.6	-	2.6	1.0	-	6.8

Applicability - The Federal job-shop electroplating standards apply to job-shop metal finishers that do not own more than 50% of the parts processed and were in operation in their present configuration before the August 31, 1982 proposal date of the Federal metal finishing rule. This means the job-shop electroplating standards in 40 CFR 413.14(c)(g), and 413.54(c)(g) for dischargers of more than 10,000 gallons per day apply to all of the process wastewater discharges from Valley Plating Works to the sewers through IWD-427866.

Flow Qualifications - The Federal job-shop electroplating standards set limits for an abbreviated list of pollutants standards for dischargers of less than 10,000 gpd. This is an absolute qualification requiring the discharger to never exceed 10,000 gpd. The City of Los Angeles permit correctly applied the full list since it cites an average discharge of process-related wastewater of 48,513 gpd.

Basis of the Standards – The job-shop electroplating standards were based on a model pretreatment unit that comprises metals precipitation, settling, sludge removal, source control of toxic organics, and if necessary, cyanide destruction and chromium reduction. The best-available-technology standards were set where printed circuit board manufacturers and other job-shop 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 – The Federal categorical pretreatment standards at IWD-427866 do not need to be adjusted to account for multiple Federal categories because all process-related wastewaters qualify as Federally-regulated under 40 CFR 413. Under 40 CFR 403.6(d,e), the Federal categorical pretreatment standards must be adjusted to account for dilution from non-contact cooling waters, cooling tower bleed, and boiler blowdown. These three flows are specifically listed as dilution waters in 40 CFR 403.6(e), and they account for roughly 160 gpd of the calculated 48,513 gpd average discharge from Valley Plating Works. As a result, the combined wastestream formula must be used to adjust the standards downward.

$$C_{427866} = \frac{C_{413} Q_{413}}{Q_{413}} \left[ \frac{Q_{\text{total}} - Q_{\text{dilution}}}{Q_{\text{total}}} \right]$$

$C_{427866}$  = Fed Standards at IWD-427866  
 $C_{413}$  = Fed Standards from 40CFR 413  
 $Q_{\text{total}}$  = Flow at IWD-427866  
 $Q_{413}$  = Flow Regulated by 40CFR 413  
 $Q_{\text{dilution}}$  = Flow Classified as Dilution



The Federal standards in 40 CFR 413.03 also allow facilities with an approved toxic organics management plan to certify instead of sample for toxic organics. The City of Los Angeles approved a toxic organics management plan for Valley Plating Works that exempts it from self-monitoring for all toxic organics except bis(2-ethylhexyl)phthalate (Permit Part 3.A.1).

Compliance Deadline - Existing source job-shop metal finishers were required to comply with the Federal standards by the final compliance deadline of July 31, 1986.

## 2.4 Federal Prohibitions

The Federal standards in 40 CFR 403.6(d) and 403.17(d) prohibit dilution as a substitute for treatment, and the bypassing of any on-site treatment necessary to comply with standards, respectively. The City of Los Angeles permit establishes these prohibitions through incorporation of provisions against the dilution as a substitute for treatment (Permit Part 6.B.8) and bypassing treatment necessary to comply (Permit Part 6.C.4).

## 2.5 Point(s) of Compliance

The permit designates a sampling box just after the Lamella clarifier as the location of the secured sampling point, designated in this report as IWD-427866.

Federal Standards - Federal categorical pretreatment standards apply end-of-process-after-treatment to all Federally-regulated discharges to the sewers. IWD-427866 is a suitable end-of-process-after-treatment sample point representative of the day-to-day discharge of Federally-regulated wastewaters from Valley Plating Works for all parameters.

Local Limits - Local limits and the national prohibitions apply end-of-pipe to non-domestic flows. IWD-427866 is a suitable end-of-pipe sample point representative of the day-to-day non-domestic wastewater discharges.

## 2.6 Compliance Sampling

The national prohibitions are instantaneous-maximums and are comparable to samples of any length including single grab samples. Federal categorical pretreatment standards are daily-maximums comparable to 24-hour composite samples. The 24-hour composite samples can be replaced with single grabs or manually-composited grabs that are representative of the sampling day's discharge. The City of Los Angeles permit establishes these sampling protocols by specifying the type of sampling required by parameter (Permit Part 3.A.1). *See* Section 4.0 of this report on page 12 and Table 2 on page 18.



### 3.0 Compliance with Federal Categorical 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).*

Valley Plating Works employs wastewater treatment equivalent to the models used in originally setting the Federal standards. Certain aspects of the design and built-in controls improve reliability and performance, most notably full treatment of all flows, large capacity Lamella clarification, segregated treatment by strength and chemistry, and wide spread on-demand rinsing. As a result, Valley Plating Works has consistently complied with the Federal standards. *See* Table 3 on page 19 of this report for a summary of the compliance sampling.

#### **Requirements**

- None.

#### **Recommendations**

- Hard-piping and enough permanent standpipe stations should be established for the delivery of spents to treatment in order to eliminate the use of long flexible hosing.

### 3.1 Sampling Results

The two year 2006-2008 sample record for Valley Plating Works collected from the secured sampling point consists of monthly self-monitoring and quarterly sampling collected by the City of Los Angeles. All metals samples were 24-hour composites. The others were grabs.

### 3.2 Best-Available-Technology Treatment

Valley Plating Works is currently designed and operated with what is substantially equivalent to best-available-technology (“BAT”) model treatment. The samples easily met all Federal standards at IWD-427866, with average and calculated 99th% peak concentrations of 0.004 and 0.008 mg/l cadmium, 0.084 and 0.221 mg/l chromium, 0.047 and 0.116 mg/l copper, 0.004 and 0.020 mg/l lead, 0.245 and 0.772 mg/l nickel, 0.078 and 0.225 mg/l zinc, 0.005 and 0.026 mg/l total cyanide, and 0.005 and 0.031 mg/l total toxic organics.

These sampling results indicate that the statistical probability of violating the Federal standards in the future to be less than the 1% used in setting the Federal standards point based on



the design and operation of model treatment. Valley Plating Works possesses not only treatment equivalent in design to the model treatment but also operational controls which would be expected to significantly improve performance. The improvements (+) and a few observed deficiencies (-) are listed below.

- + Capacity to treat all wastewaters through model treatment.
- + Large capacity chemical-aided Lamella-type clarification.
- + Standpipe collection stations near the processing lines for the delivery of spents to treatment.
- + Wastewater delivery and treatment segregated by strength and chemical composition.
- + Excellent process controls and reaction end-point monitoring.
- + Large capacity drying of filter press cake.
- Inconsistent flow and surging through the Lamella clarifier from feed pump cycling.
- Batch treated spents are not first directed through the filter press.
- Small capacity equalization for the handling of rinses.

### **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 BAT model treatment with dilute waste streams. This prohibition applies when sample results for a diluted waste stream are below the Federal standards and the apparent compliance is used to justify untreated discharge. Two conditions need to be established in order to make a determination of non-compliance. First, some or all of the Federally-regulated wastewaters must discharge without undergoing BAT model treatment or its equivalent. Second, there must be excess water usage within the regulated process.

There is no evidence of dilution as a substitute for treatment since Valley Plating Works does not meet both conditions of non-compliance. The first condition is not met since all Federal regulated waters discharge through BAT model treatment. The second condition is not met since the rinses were observed to be either on-demand or static.

### **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.

There were no observed methods of bypassing at Valley Plating Works. In particular, the delivery of all waste streams was observed to lead to treatment and discharge through the permitted sample point. However, the delivery of spents involves portable pumps and long flexible hosing which makes an inadvertent bypassing of treatment possible.



#### 4.0 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).*

The sample record indicates that Valley Plating Works complies with all of its local limits for metals, cyanide, organics, pH, and sulfides, and would be expected to comply with the national prohibitions for flammability. *See* Table 3 on page 19 of this report. *Also* see Sections 3.0 and 5.0 on pages 10 and 14 of this report.

##### ***Requirements***

- None.

##### ***Recommendations***

- The final discharge should be continuously self-monitored for pH.

#### 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 inspection did not include an evaluation of whether achievement of the national objectives in 40 CFR 403.2 have been demonstrated by the Hyperion wastewater treatment plant through consistent compliance with its sludge and discharge limits.

#### 4.2 Local Limits for Oxygen Demanding Pollutants and The National Prohibition Against Interference

High-Strength Organics - The process-related wastewaters discharged to the sewers are not expected to be high enough in organics strength to pose a risk of interference, with the organics strength significantly less than domestic sewage.

Metals and Cyanide - There were no violations of the local limits for arsenic, cadmium, chromium, copper, lead, nickel, silver, zinc, and total cyanide.



#### **4.3 Local Limits for Toxic Metals, Cyanide, and Other Pollutants and The National Prohibition Against Pass-Through**

Metals and Cyanide – There were no violations of the local limits for arsenic, cadmium, chromium, copper, lead, nickel, silver, zinc, and total cyanide.

Toxic Organics – There are no local limits for toxic organics.

Oil and Grease – There were no violations of the local limits for oil and grease and none are expected in the future.

#### **4.4 Local Limits for pH and Sulfides, and The National Prohibitions Against Safety Hazards and Corrosive Structural Damage**

Corrosion - Sewer collection system interferences related to the formation of hydrogen sulfide and the resulting acidic disintegration of the sewers are possible but not expected. The wastewaters discharged to the sewers are not high-strength in biodegradable organics nor acidic in nature. However, the wastewaters feeding into the final metals precipitation and Lamella clarification treatment steps prior to discharge comprise both acidic and alkaline waste streams and can greatly vary in pH. As a result, compliance with the pH limits depends on the continuous successful operation of the treatment. For this reason, the discharge should be continuously self-monitored for pH.

Flammability - Flammability would not be expected because sampling shows that the discharges to the sewer entrain negligible amounts of volatile organics.



## 5.0 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) and 403.12(h).*

Permit Requirements – Valley Plating Works has successfully fulfilled the self-monitoring requirements set forth in the city permit. Over the past two years, the sample record shows that Valley Plating Works (1) submitted monthly sample results for all permit listed parameters, (2) collected all samples from the designated compliance sampling point, (3) correctly obtained 24-hour composites for metals and grabs for the other pollutants, and (4) followed appropriate chain-of-custody procedures.

Representativeness - The sample record also appears representative of the discharge to the sewers over the sampling day and the six-month reporting period. In particular, sampling as required by the permit is frequent enough to capture the intermittent release of batch treated high-strength wastewaters. Some pollutants present at concentrations well below the Federal standards and local limits do not need to be sampled as frequently as currently required by the permit. However, the self-monitoring for pH should be increased to be continuous given the variable and uncontrolled nature of the wastewaters entering the final treatment unit.

### ***Requirements***

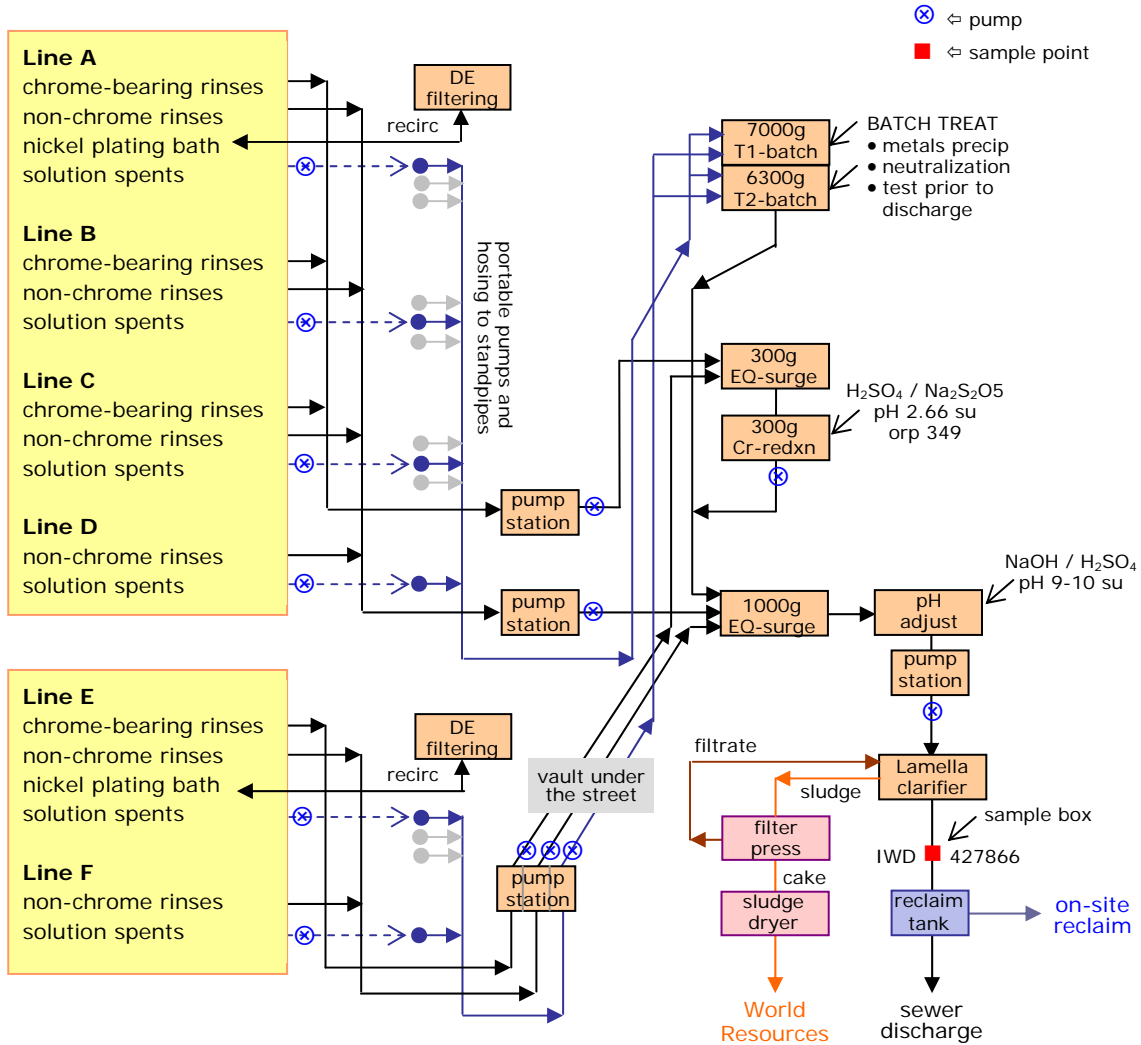
- *See* Table 2 on page 18 for the self-monitoring and city monitoring requirements for IWD-427866 that would be considered to be representative of the discharge.

### ***Recommendations***

- Self-certification statements should include copies of the hazardous waste manifests documenting the off-hauling of spents, spent static rinses, and residuals.
- *See* Sections 4.0 and 4.4 on pages 12 and 13 of this report for findings regarding self-monitoring for pH.



**Figure 1**  
 Valley Plating Works - Configuration and Layout







**Table 1**  
Valley Plating Works - Tank Inventory, Tank Number, and Volume

gals		Line A - Small Automatic Chrome Line	gals		Line C - Barrel Plating Line
760	A1	alkaline cleaner	780	C1	alkaline cleaner
230	A2	ultrasonic cleaner	780	C2	alkaline cleaner
490	A3	alkaline cleaner	780	C3	overflow rinse for C1-C2
490	A4	alkaline electrocleaner	600	C4	acid pickling
230	A5	overflow rinse for A4	780	C5	plating activation
230	A6	overflow rinse for A4	780	C6	alkaline electrocleaner
460	A7	acid pickling	780	C7	overflow rinse for C8
230	A8	drag-out rinse for A7	3000	C8	nickel plating
230	A9	overflow rinse for A7	780	C9	overflow rinse for C11
460	A10	alkaline electrocleaner	780	C10	overflow rinse for C11
230	A11	overflow rinse for A10	3200	C11	acid zinc plating
230	A12	overflow rinse for A10	500	C12	alkaline nickel strip
230	A13	acid deactivation	780	C13	black chromate coating
230	A14	plating activation	780	C14	overflow rinse for C13
1400	A15A	semi-bright nickel plating	780	C15	overflow rinse for C13
2700	A15	bright nickel plating	780	C16	overflow rinse for C18
230	A16	overflow rinse for A15-15A	780	C17	overflow rinse for C18
230	A17	overflow rinse for A15-15A	780	C18	blue chromate coating
230	A18	plating activation	35	C19	yellow chromate coating
700	A19	chromium plating	35	C20	overflow rinse for C19
230	A20	drag-out rinse for A19	35	C21	overflow rinse for C19
230	A21	overflow rinse for A19	35	C22	nitric-acid activation
230	A22	overflow rinse for A19	35	C23	blue chromate coating
230	A23	final DI rinse	35	C24	overflow rinse for C23
230	A24	final DI rinse	35	C25	overflow rinse for C23
gals		Line B - Rack Zinc Plating Line	35		C26
-	B3	parts dryer	gal	Line D - Hand Plating Line	
-	B4	parts dryer	400	D1	alkaline nickel strip
1400	B5	DI water rinse for B7	450	D2	alkaline electrocleaner
1400	B6	overflow rinse for B7	-	D3	Empty
1400	B7	alkaline cleaner for B8	220	D4	acid copper rack strip
1400	B8	alkaline electrocleaner	130	D5	static rinse for D1-D2
1400	B9	overflow rinse for B6	300	D6	acid desmut
1400	B10	acid pickling	90	D7	acid descale and etching
1400	B11	overflow rinse for B10	135	D8	tri-acid activation
6000	B12	alkaline zinc plating	140	D9	acid descale and etching
1400	B13	chromate activation	105	D10	alkaline salts cleaner
1400	B14	yellow chromate coating	120	D11	static rinse for D10
1400	B15	overflow rinse for B14-16	90	D12	static rinse for D13
1400	B16	blue chromate coating	570	D13	alkaline nickel strip



<b>Table 1 (continued)</b>					
<b>Valley Plating Works - Tank Inventory, Tank Number, and Volume</b>					
gals	Line E - Large Automatic Cr Raceway		gals	Line F - Stripping Line	
3000	E1	alkaline cleaner	-	F1	empty – electrocleaner
3000	E2	alkaline cleaner	-	F2	empty – rinse
900	E3	overflow rinse for E1-E2	-	F3	empty - electrolytic strip
1620	E4	alkaline electrocleaner	-	F4	empty – rinse
800	E5	overflow rinse for E4	-	F5	empty – rinse
800	E6	overflow rinse for E4	200	F6	acid rack strip
2400	E7	acid pickling	80	F7	overflow rinse for F6
1800	E8	acid pickling	80	F8	overflow rinse for F6
2800	E9	acid pickling	80	F9	overflow rinse for F6
900	E10	overflow rinse for E7-9	-	F10	empty - acid strip
900	E11	overflow rinse for E7-9	-	F11	empty – rinse
1800	E12	alkaline electrocleaner	gal	Chemical Storage Tanks	
800	E13	overflow rinse for E12	3000	Tank A	sulfuric acid
800	E14	overflow rinse for E12	500	Tank B	liquid caustic soda
800	E15	acid activation	700	Tank C	hydrochloric acid
1800	E16	acid activation	400	Tank D	nitric acid
800	E17	alkaline deactivation			
800	E18	alkaline deactivation			
18000	E19-29	nickel plating			
800	E21	drag-out rinse for E19-20			
900	E22	overflow rinse for E19-20			
900	E23	countercurrent rinse			
800	E24	countercurrent rinse			
800	E25	countercurrent rinse			
800	E26	chrome activation			
2730	E27	chromium plating			
800	E28	drag-out rinse for E27			
800	E29	overflow rinse for E27			
800	E30	acid passivation			
800	E31	overflow rinse for E30			
800	E32	overflow rinse for E30			
900	E33	final overflow rinse			
1800	E34	final overflow rinse			
-	E35	empty			



**Table 2**  
 Sewer Discharge Standards and Limits for Valley Plating Works @ IWD-427866

Pollutants of concern (mg/l)	Federal standards (d-max)	Federal standards (4d-avg)	national prohibition (instant)	local limits (instant)	monitoring frequency for IWD-427866 © discharger city	
flow (gpd)	-	-	-	-	1/day	-
cadmium	1.20	0.70	-	15.0	1/six-mos	1/year
chromium	6.98	3.99	-	10.0	1/month	1/quarter
copper	4.49	2.69	-	15.0	1/month	1/quarter
lead	0.60	0.40	-	5.0	1/six-mos	1/year
nickel	4.09	2.59	-	12.0	1/month	1/quarter
zinc	4.19	2.59	-	25.0	1/month	1/quarter
cyanide – total	1.89	1.00	-	10.0	1/month	1/quarter
total metals	10.47 ④	6.78 ④	-	-	1/month	1/quarter
total toxic organics	2.12	-	-	-	1/six-mos	1/year
oil and grease - total	-	-	-	600	1/month	1/quarter
pH (s.u.)	-	-	<5.0	5.5-11.0	continuous	1/quarter
arsenic	-	-	-	3.0	③	1/year
chloride	-	-	-	-	③	1/year
dissolved sulfides	-	-	-	0.10	③	1/year
iron	-	-	-	-	③	1/year
molybdenum	-	-	-	-	③	1/year
silver	-	-	-	5.0	③	1/year
cyanide – amenable	-	-	-	2.0	③	1/year
explosivity	-	-	<140°F ①	②	③	③

- ① Closed-cup flashpoint
- ② Narrative prohibition against the introduction of flammable or explosive substances
- ③ As part of periodic priority pollutant scans in order to identify changes in discharge quality
- ④ Total metals comprises the sum concentrations for chromium, copper, nickel, and zinc.
- ⑤ Four-day average standards are compare to the average of four consecutive samples.
- ⑥ Recommended **reductions in green**. Recommended **increases in red**.



**Table 3**  
 July 2006 - July 2008 Sample Record for Valley Plating Works @ IWD-427866

pollutants (µg/l)	effluent sampling results				violation rate			sample count
	mean	99th%	min	max	d-max	4d-avg	instant	
arsenic	3.5	7.5	<2.5	7.8	-	-	0/32	32
cadmium	1.3	7.8	<0.3	8.4	0/32	0/8	0/32	32
chromium	84.0	220.9	15.8	260.0	0/32	0/8	0/32	32
copper	46.9	115.8	<20.0	150.0	0/32	0/8	0/32	32
iron	203.7	703.4	68.0	726.0	-	-	-	8
lead	3.6	19.9	<1.1	10.2	0/32	0/8	0/32	32
molybdenum	32.3	80.7	13.6	78.5	-	-	-	9
nickel	244.5	771.5	72.5	980.0	0/32	0/8	0/32	32
silver	4.6	19.1	<0.2	30.0	-	-	0/32	32
zinc	77.5	225.0	29.0	370.0	0/32	0/8	0/32	32
total cyanide	4.5	25.8	<4.0	50.0	0/32	0/8	0/32	32
amenable cyanide	<4.0	<4.0	<4.0	<4.0	-	-	0/32	32
total toxic organics	4.1	31.3	<2.0	55.2	0/27	-	0/27	27
dissolved sulfides	<10	<10	<10	<10	-	-	0/32	32
total metals ②	460.8	1123.6	159.0	1540.0	0/32	0/8	-	32
chloride (mg/l)	320.1	461.7	221.0	408.0	-	-	-	27
oil+grease - petro (mg/l)	4.7	48.2	<3.0	105.0	-	-	0/32	32
flow (gpd)	35676	78559	13609	99534	-	-	-	762
pH (s.u.)	9.6 ①	-	8.66	10.43	-	-	0/32	32
explosivity	-	-	-	-	-	-	-	-

① pH median

② Total metals comprises the sum concentrations for chromium, copper, nickel, and zinc.