



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

April 13, 2006

In Reply Refer To: WTR-7

Denis Mikitchook, Operations Manager
General Magnaplate Corporation
2707 Palma Drive
Ventura, California 93003

Re: September 7, 2006 Clean Water Act Inspection

Dear Mr. Mikitchook:

Enclosed is the March 28, 2007 report for our September 7, 2006 inspection of General Magnaplate in Ventura, California. Please submit a short response to the findings in Sections 2 through 5 of this report, to EPA, the City of San Buenaventura, and the Regional Water Quality Control Board, by **May 30, 2007**.

The main findings are summarized below:

- 1 General Magnaplate qualifies as a job-shop metal finisher subject to the Federal standards for new source metal finishers and also perhaps for existing source job-shop electroplaters as well. Ventura incorrectly classified and permitted General Magnaplate.
- 2 Treatment is equivalent in performance to the models used in setting the Federal metal finishing standards. However, most likely because of inconsistent operations, there have been variations in the discharge quality that would not be expected from such a well-designed system, resulting in isolated nickel and pH violations. The causes of the violations should be determined.
- 3 There is no evidence that compliance was achieved through dilution as a substitute for treatment nor is there evidence of an operational ability to bypass the treatment in-place.

I certainly appreciate your helpfulness extended to me during this inspection. I remain available to the City 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.

Sincerely,

Greg V. Arthur
CWA Compliance Office

Enclosure

cc: Gene Hibberd, City of San Buenaventura
Dan Radulescu, RWQCB-Los Angeles



U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 9
CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User: General Magnaplate Corporation
2707 Palma Drive, Ventura, California 93003
40 CFR 413 - Existing Source Job-Shop Metal Finishing
40 CFR 433 Subpart A - New Source Metal Finishing

Treatment Works: City of San Buenaventura
Ventura Water Reclamation Facility
(NPDES Permit CA0053651)

Date of Inspection: September 7, 2007

Inspection Participants:

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

RWQCB-Los Angeles: None

San Buenaventura: Gene Hibberd, Sr Industrial Wastewater Inspector, (805) 207-8794

General Magnaplate: Denis Mikitchook, Operations Manager, (805) 692-6262

Report Prepared By: Greg V. Arthur, Environmental Engineer
April 13, 2007



1.0 Scope and Purpose

On September 7, 2006, EPA, and the City of San Buenaventura (“Ventura”) conducted a compliance evaluation inspection of General Magnaplate Corporation in Ventura, 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.

General Magnaplate is a significant industrial user (“SIU”) within the City of Ventura sewer service area 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 on September 7, 2006.

1.1 Process Description

General Magnaplate is a metal finishing job-shop that provides specialty metal finishing of aluminum, stainless steel, steel, and copper. General Magnaplate in Ventura is one of four General Magnaplate facilities in North America that coat both ferrous and non-ferrous metals parts with coatings infused with fluoro-polymers to provide specialty corrosion resistance, abrasion resistance, and non-stick and slick finishes. General Magnaplate in Ventura does not perform chromium plating or chem film chromium conversion coating on-site. General Magnaplate in Ventura operates in three buildings.

Bldg 2707 Coatings	▪ nickel line - alkaline soap, alkaline electrocleaning, nickel strike, electroless nickel plating, nitric-acid nickel stripping, hydrochloric-acid activation
	▪ aluminum line - alkaline degreasing, acid activation, zincate coating, nitric-acid zincate stripping
	▪ anodizing line - alkaline cleaning, caustic etching, nitric-acid deoxidation, sulfuric-acid Type III hard anodizing, nickel acetate sealing, fluoro-polymer infusion
	▪ chem film line - decommissioned
Bldg 2703 Painting	▪ dry-booth painting, oven curing
	▪ plasma thermal spray coating
Bldg 2705 Blasting	▪ dry-booth glass / aluminum oxide blasting
	▪ dry chem storage area

General Magnaplate does not own parts that undergo metal finishing on-site. The facility previously operated as Classic Chrome at this location. General Magnaplate purchased this facility in 1980 and installed the first metals coating lines in 1981. According to the Operations Manager, the nickel line was first installed in 1981 and expanded but not



modified in the late 1980's; the aluminum line was installed in the late 1980's; and the anodizing line was installed in 1981. Also according to the Operations Manager, secondary containment was installed in 1985 although it is not clear whether this involved the removal and reinstallation of the metal finishing lines. Finally, General Magnaplate discharges its non-domestic wastewaters to the Ventura domestic sewers through a single sewer connection designated in this report by permit number as IWD-32. Domestic sewage discharges through separate connections downstream of the industrial wastewater connection.

1.2 Facility SIC Code

General Magnaplate is assigned the SIC code for plating, polishing, anodizing, and coloring (SIC 3471) and for coating (SIC 3479).

1.3 Facility Wastewater Sources

The metal finishing lines generate spents, rinses, and residuals. For the purposes of this report, the tank designation numbers are those identified by General Magnaplate during this inspection. The following metal finishing line designations are solely for the purposes of this inspection. *See* Appendix 1.

Nickel Line "A" - Zincate Aluminum Line "B" - Anodizing Line "C"

Spent Solutions – The imparted contamination from the processing of parts and the progressive drop in solution strength results in the generation of spent solutions. According to the General Magnaplate most spent solutions are hauled off-site as hazardous. The nickel-bearing spents first are collected into a 1750 gallon holding tank. The others are barrelled for hauling off-site. The list of spent solutions and the asserted disposal methods follows below.

Baths Generating Spents		Baths Not Generating Spents
A40 - alkaline soap	A12 - nickel strike ✓	A8 - alkaline electroclean
A10 - acid activation	A13 - nickel strike ✓	C47 - Type III anodizing
B83 - alkaline degrease	A1 - e-less nickel plate ✓	C48 - Type III anodizing
B84 - acid activation	A2 - e-less nickel plate ✓	C50 - nickel acetate seal
B87 - zincate	A5 - e-less nickel plate ✓	C56 - fluoro-polymer infuse
B86 - acid zincate strip	A* - acid nickel strip	
C41 - alkaline clean		
C42 - caustic etching		
C45 - acid deoxidation	✓ To Nickel Holding Tank	
Hauled Off-site as Haz	Hauled Off-site as Haz	Regenerated by Adds Only

Rinses – General Magnaplate generally employs first-stage static drag-out or overtank spray rinses followed by a limited number of second- and third-stage rinses, some of them overflows, that discharge to the sewers. The overflow rinses were on-demand. The list of rinses follow on the next page.



Rinses Not Discharged		Rinses Discharged
A40 alk soap 1°drag-out A8 - alk e-clean 1°drag-out A1 - e-less Ni 1°spray ✓ A2 - e-less Ni 1°spray ✓ A5 - Ni-plate 1°spray ✓ A* - Ni-strip 1°drag-out A10 - acid active 1°drag-out B87 - zincate 1°drag-out C41 - alk clean 1°drag-out C42 - alk etch 1°drag-out C45 - acid deox 1°drag-out C56 - fluoro-polymer infusion 1°drag-out ✓ Overtank spray	A8 - alk e-clean 2°static A13A - Ni-strike 1°static ✓ ✓ To Nickel Holding Tank	A18 - Ni-plate 2°static A34 - Ni-plate 2°static B83A - alk degrease/acid activate 1°overflow ✓ B87 - zincate 2°overflow ✓ B87 - zincate 3°static C44 - alk clean / etch 2°overflow ✓ C47A - anodize/Ni-acetate seal 1°overflow ✓ C55 - spent hot water dip C57 - spent DI water dip ✓ On-demand Overflow
Reclaimed as Make-up or Regenerated by Adds Only	Spents Hauled Off-site	Discharged to IWD-32

Residuals – General Magnaplate rinses with RO water and employs two acid activation steps to neutralize the surface chemistry of the previous steps, in order to extend the useful life of the metal finishing solutions. General Magnaplate would be expected to generate blasting grit and debris from the dry-booth glass and aluminum oxide blasting process, as well as spent ion exchange columns for off-site regeneration. Otherwise, no other residuals are generated on-site because it provides no chemical treatment or preconditioning of any spent solutions, spent static rinses, or overflow rinses.

1.4 Facility Process Wastewater Composition

The process wastewaters listed in section 1.3 above would be expected to contain copper, chromium, lead, nickel, zinc, and acidity, as well as oil & grease, salts, and surfactants, aluminum, suspended solids, and other pollutants in the surface grime cleaned off of parts.

1.5 Facility Process Wastewater Treatment

Treated process wastewaters discharge to the sewers through a single connection designated in this report after the Ventura permit number as IWD-32. The 2005-2006 sampling data does not include flow rate results. *See* Appendix 1.

Delivery – Non-nickel spents are transferred by portable pump and hose to barrels for off-hauling. Nickel-bearing spents are delivered by portable pump and hose to a nickel holding tank. Nickel-bearing rinses from nickel Line "A" are drained to floor drains that lead into the industrial wastewater treatment plant. The non-nickel rinses from the zincate Line "B" and anodizing Line "C" are hard-piped for delivery to the industrial wastewater treatment plant.



Treatment – Treatment consists of three ion exchange lines to handle acidic, alkaline, and metals-bearing rinses. The ion exchange lines continue through two pH adjustment tanks and a final clarifier prior to discharge to the sewers through IWD-32. Spent ion exchange columns are hauled off-site for regeneration.



*Photo: Nickel-Bearing Sump and Pump
Taken By: Greg V. Arthur
Date: 09/07/06*



*Photo: Sample Box and Sewer Connection
Taken By: Greg V. Arthur
Date: 09/07/06*

Sewer Discharge – Treated wastewaters discharge to the sewers through a sample box located outside of the shop. This sample box has a pH probe connected to a continuous pH meter installed inside the shop. The sample box serves as the permitted compliance sampling point, which is designated in this report after the Ventura permit number as IWD-32.

1.6 POTW Legal Authorities

City of Ventura – Ventura operates an EPA-approved pretreatment program as required by the State of California in the Los Angeles RWQCB's Waste Discharge Requirements, No. R4-2000-143, reissued to Ventura in 2000 and serving as NPDES Permit No. CA0053651. As part of this, Ventura has established a sewer use ordinance that applies to all industrial users in its sewer system. Under this authority, Ventura issued an industrial user permit to General Magnaplate, No. 32 covering the sewer discharge from IWD-32.

1.7 Photo Documentation

Arthur took four digital photos during this inspection, recorded as the jpeg files named *genmagnaplate-1.jpg* through *-4.jpg*. Those not published in this report did not depict a recognizable image and thus were unusable.

1.8 Sampling Record

All compliance samples are collected from the sample box located outside of the shop, designated as IWD-32. *See* Appendix 3 for a summary of the 2005-2006 sampling.



2.0 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 sewer discharges from industrial users. (40 CFR 403.5 and 403.6).

Summary

The Federal categorical pretreatment standards for both new source metal finishing in 40 CFR 433 and existing source job-shop metal finishing in 40 CFR 413 apply to the process wastewater discharges from General Magnaplate through IWD-32. It is possible that only the new source metal finishing standards apply if the installation of secondary containment in 1985 resulted in the removal and reinstallation of the metal finishing process lines. The Ventura permit applied the local limits and misapplied the Federal standards for just existing source job-shop metal finishers in 40 CFR 413. As a result, the Ventura permit does not accurately state the discharge requirements for General Magnaplate. The application of Federal categorical standards, national prohibitions, and local limits was determined through visual inspection. *See* Appendix 2 for the sewer discharge standards and limits.

Requirements

- The permit must apply combined standards to IWD-32 that reflect both the Federal job-shop electroplating standards for existing sources in 40 CFR 413 and the Federal metal finishing standards for new sources in 40 CFR 433.

Recommendations

- General Magnaplate should submit a report detailing (1) the construction involved in the installation of secondary containment in 1985, and (2) the installation of any new production lines since 1983.
- The permit must prohibit dilution as a substitute for any treatment that is necessary to comply with Federal standards and prohibit the bypassing of any treatment necessary to comply with either Federal standards or local limits.

2.1 Classification by Federal Point Source Category

General Magnaplate qualifies as a job-shop metal finisher subject to both the Federal metal finishing standards for new sources in 40 CFR 433 and the Federal job-shop electroplating standards for existing sources in 40 CFR 413. Ventura incorrectly classified General Magnaplate solely under 40 CFR 413. Federal standards are self-implementing which means they apply to regulated waste streams whether or not they are implemented in a local permit. The Federal rules in 40 CFR 403.6 define domestic sewage and non-contact wastewaters to be dilution waters.



New or Existing Sources – General Magnaplate no longer continues to be subject solely to the Federal standards for existing sources. Under the definitions in 40 CFR 403.3(k), a process constructed at an existing source job-shop metal finisher 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 existing sources on-site. This means new source standards apply to the original installation of the metal finishing lines, rebuilt or moved lines, or existing lines converted to do new operations. This also means that the new source standards generally do not apply to the piecemeal replacement of tanks for maintenance in otherwise intact metal finishing lines, nor do they apply to treatment upgrades without altering production. The preamble to the final 1988 Federal rule states that the new source standards apply when “an existing source undertakes major construction that legitimately provides it with the opportunity to install the best and most efficient production process and wastewater treatment technologies” (*Fed Register, Vol.53, No.200, October 17, 1988, p.40601*).

There have been at least two configuration changes at General Magnaplate since the start-up in 1981. Specifically, according to the General Manager, General Magnaplate installed the aluminum zincate processing Line “B” in the late 1980’s, and retrofitted the shop with secondary containment in 1985. A new source versus existing source determination for General Magnaplate depends on a number of factors.

Line B - First, the aluminum zincate processing Line “B” is an entirely new installation and as a result the wastewaters generated by Line B are regulated under new source standards.

Secondary Containment - If the installation of the secondary containment involved the physical relocation and re-installation of entire lines, then that would qualify as construction that “legitimately provides it with the opportunity to install the best and most efficient production process and wastewater treatment technologies”. In that case, then the entire facility would qualify as a new source.

Estimated Flow Rates (gpd)	Qualifying as New Source	
	Line B Only	Entire Facility
Existing Source 40 CFR 413 Job-Shop Electroplating	6700	0
New Source 40 CFR 433 Metal Finishing	3300	10000
Dilution Waters 40 CFR 403.6(e)	0	0

The Ventura permit advances the Federal standards in 40 CFR 413 for dischargers of less than 10,000 gpd. EPA did not have any other discharge flow rate information. The flow rate estimates above are based solely on the ratio of discharging overflow rinse tanks from lines qualifying as new or existing sources, and an assumed discharge flow rate of 10,000 gpd. Better estimates could be based on actual wastewater delivery.



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 Ventura local limits apply to non-domestic discharges in the Ventura service area.

2.3 Federal Categorical Pretreatment Standards Existing Source Job-Shop Electroplating - 40 CFR 413

40 CFR 413	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CNt	CNa	TTO	TM
daily-maximum (mg/l)	1.2	7.0	4.5	0.6	4.1	-	4.2	1.9	5.0	2.13*	10.5
four-day average (mg/l)	0.7	4.0	2.7	0.4	2.6	-	2.6	1.0	2.7	-	6.8
stat conversion to mo-avgs	0.5	2.5	1.8	0.3	1.8	-	1.8	0.55	1.5	-	5.0
bold - the only standards that apply if the discharge is <10,000 gpd / * TTO 4.57 mg/l											

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. As long as General Magnaplate discharges less than 10,000 gpd, this means the job-shop electroplating standards in 40 CFR 413.14(b)(f), 413.44(b)(f), 413.54(b)(f), and 413.64(b)(f) for dischargers under 10,000 gallons per day apply to process wastewater discharges from existing source lines at General Magnaplate to the sewers through IWD-32.

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. For dischargers of less than 10,000 gallons per day, the model pretreatment unit was applied only to process wastewaters bearing cadmium, lead, amenable cyanide, or total toxic organics. 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 – If these standards prove to apply (*see* section 2.1), then the Federal categorical pretreatment standards at IWD-32 need to be adjusted to account for dual Federal categories. The statistical equivalent monthly-average standards for 40 CFR 413 must be used in the place of the 4-day averages in order to calculate the monthly-average standards for IWD-32 using the combined wastestream formula in 40 CFR 403.6(e).

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



**2.4 Federal Categorical Pretreatment Standards
 New Source Metal Finishing - 40 CFR 433.17**

40 CFR 433.17	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CNt	CNa	TTO
daily-maximum (mg/l)	0.11	2.77	3.38	0.69	3.98	0.43	2.61	1.20	0.86	2.13
month-average (mg/l)	0.07	1.71	2.07	0.43	2.38	0.24	1.48	0.65	0.32	-

Applicability - Under 40 CFR 433.10(a), the metal finishing standards apply to the process wastewaters from the new source metal finishing lines because the facility’s operations involve electroplating, electroless plating, anodizing, chemical coating, and etching. 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, associated with metal finishing and specifically listed in 40 CFR 433.10(a). If any of the core operations are performed, the new source metal finishing standards apply to discharges from any of the new source core or associated operations. As a result, the metal finishing standards apply to the process wastewater discharges from the aluminum zincate Line “B” through IWD-32, and potentially from the entire facility.

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 for toxic organics, no discharge of cadmium-bearing wastewaters, and if necessary, cyanide destruction and chromium reduction. The best-available-technology standards were set 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 – Under 40 CFR 433.12(c), the cyanide standards as applied to metal finishing wastewater discharges must be adjusted to account for dilution from non-cyanide bearing waste streams (Federally-regulated and unregulated). Since there are no cyanide-bearing wastewaters, the cyanide standards as applied to IWD-32 default to the unadjusted standards.

Compliance Deadline - New sources were required to comply on the first day of discharge.

2.5 Federal Standards Applied to Combined Flows

If 40 CFR 413 applies, then under 40 CFR 403.6(d) and (e), the Federal standards applied to the discharge at IWD-32 must be adjusted to account for the application of both 40 CFR 413 and 433. These adjustments are dependent on how much of the discharge flow is generated by existing source lines and by new source lines, as well as on whether the facility discharges less or more than 10,000 gpd. The Federal standards at IWD-32 do not have to be adjusted for dilution from non-contact wastewaters such as cooling tower blowdown, domestic sewage, or water preconditioning brines. *See* Appendix 2.

If the discharge is less than 10,000 gpd, for pollutants regulated by both Federal rules, the combined wastestream formula results in flow-weighted averages for just cadmium, lead, amenable cyanide, and total toxic organics. For the other pollutants regulated by either 40



CFR 413 or 40 CFR 433, the combined wastestream formula defaults to the active Federal rule to all process-related flows. As a result, if the discharge is less than 10,000 gpd, the metal finishing standards in 40 CFR 433 solely apply for chromium, copper, nickel, silver, zinc, and total cyanide, to all flows.

2.6 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 Ventura permit does not specifically advance a provision prohibiting dilution as a substitute for treatment nor a provision against the bypassing treatment necessary to comply.

2.7 Point(s) of Compliance

The permit implies designates the Ventura sampling box outside of the facility, downstream from the final clarifier, and upstream of the facility domestic contributions, as the compliance point (designated in this report as IWD-32).

Local Limits - Local limits and the national prohibitions apply end-of-pipe to all non-domestic flows from General Magnaplate. The sample point designated in this report as IWD-32 is a suitable end-of-pipe sample point representative of the day-to-day non-domestic wastewater discharges.

Federal Standards - Federal categorical pretreatment standards apply end-of-process-after-treatment to all Federally-regulated discharges to the sewers. The sample point IWD-32 is also a suitable end-of-process-after-treatment sample point representative of the day-to-day discharge of Federally-regulated wastewaters.

2.8 Compliance Sampling

The national prohibitions and local limits are instantaneous-maximums and are comparable to samples of any length including single grab samples. The 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.



3.0 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).

Summary

General Magnaplate consistently complies with the applicable Federal categorical pretreatment standards because (1) it provides treatment considered equivalent in performance to the best-available-technology (BAT) treatment for metals removal, (2) it does not generate cyanide-bearing waste streams, and (3) it complies with an approved solvent management plan in lieu of the self-monitoring for total toxic organics. Any performance related violations are likely caused by inconsistent operations or maintenance-related errors. There is no evidence of dilution as a substitute for treatment or of bypassing of treatment necessary to comply because all discharges to the sewers undergo BAT-equivalent treatment. All sampling results are useable for determining compliance. *See* Appendix 3.

Requirements

- None.

Recommendations

- General Magnaplate should identify the cause of the nickel violations experienced in February 2005 and consider (1) the operation of the ion exchange columns in lead-lag mode, and (2) the installation of automatic diverter valving.
- The final clarifier should be operated without a thick sludge blanket.

3.1 Sampling Results

The 2005-2006 sample records for General Magnaplate, comprising both the required self-monitoring and the samples collected by Ventura, from the monitoring box outside of the facility, consist of (1) quarterly four-consecutive-day sampling for chromium, lead, nickel, and pH, (2) semi-annual four-consecutive-day sampling for cadmium, copper, silver, zinc, and total cyanide, and (3) sporadic sampling for total toxic organics and total dissolved solids. All metals samples were 24-hour composites. All cyanide samples were grabs. All pertinent sample results are useable for determining compliance with the Federal standards because they account for all rinses and spents discharged. General Magnaplate is exempted



from total toxic organics sampling because it operates under an approved toxic organics management plan, as set forth in 40 CFR 413 and 433. *See* item 5.0 of this report.

3.2 Best-Available-Technology Treatment

All wastewater discharges to the sewer are treated for metals removal and final pH adjustment. The metals removal takes place through ion exchange which, if consistently operated, is considered to provide a level of treatment equal to or exceeding the performance of the model treatment originally evaluated to set the Federal standards. As a result, the 2005-2006 samples complied with the Federal standards nearly all of the time, with average and calculated 99th% peak concentrations of <0.01 mg/l cadmium, 0.07 and 0.26 mg/l chromium, 0.17 and 0.94 mg/l copper, 0.07 and 0.36 mg/l lead, 0.01 and 0.02 mg/l silver, 0.10 and 0.32 mg/l zinc, and 0.02 and 0.04 mg/l total cyanide. However, two of the 32 samples for nickel, in February 2005, exceeded the Federal standards, resulting in average and calculated 99th% peak concentrations of 1.01 and 5.15 mg/l nickel. These violations are likely caused either by operational error since ion exchange would be expected to result in nickel levels well below the Federal standards, or by the loss of solids from the high sludge blanket observed in the final clarifier.

In the past, General Magnaplate registered apparent compliance with the Federal nickel standards because the Ventura permit inappropriately applied job-shop electroplating standards for small existing sources. The misapplied standards exclude nickel. The best-available-technology (BAT) equivalent treatment in place at General Magnaplate incorporates a few features that improve its performance by managing the variabilities inherent in wastewater generation, treatment, and discharge. The BAT treatment at General Magnaplate is improved by the segregated ion exchanged treatment of acidic, nickel-bearing, and alkaline rinses, and the segregated handling of spent solutions to off-site disposal. However, effective operation of the ion exchange columns requires the accurate identification of break-through resulting in timely diversion through recharged columns. The effective overall performance also requires efforts to keep the final clarifier free from the formation of a thick sludge blanket.

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. In particular, this prohibition applies when sample results for a diluted waste stream are below the Federal standards and the apparent compliance is used to justify discharge without treatment. There are two conditions that need to be established in order to make a determination of non-compliance with this prohibition. 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.

General Magnaplate does not meet either condition since all wastewater discharges are treated through the ion exchange columns, and all running rinses are operated on-demand.



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 is no evidence of the bypassing of any treatment at General Magnaplate necessary to comply with standards. In particular, spents are delivered from the tanks to barrels by portable pump and short hosing. Maintaining short hose lengths prevents the delivery of spent solutions to improper disposal points. All rinses also feed through the ion exchange columns.



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).

Summary

General Magnaplate has the treatment capacity and capability to consistently comply with the local limits, which are much less stringent than the Federal standards. In 2005 and 2006, there was just a single violation of the lower pH limit. Continued compliance with the Federal standards for metals and cyanide as well as the Federal requirement to comply with a toxic organics management plan would be fully expected to also result in consistent compliance with the local limits. *See* Appendix 3. Also *see* Sections 3.0 and 5.0 of this report.

Requirements

- None.

Recommendations

- The Ventura permit should also apply the local limits for chloride, and sulfate.
- General Magnaplate should identify the cause of the pH violation in June 2005.
- Continuous final pH metering results should be reported.

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 Ventura wastewater treatment plant through consistent compliance with their sludge and discharge limits.



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

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 wastewater strengths significantly less than domestic sewage.

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 cadmium, chromium, copper, lead, nickel, silver, zinc, and cyanide. Continued compliance with the Federal standards would be expected to result in compliance with the local limits. **See** section 3.2 of this report.

Organics – Concentrations much over the detection limits of the toxic organics would not be expected to be generated by General Magnaplate. The locally-regulated organics are effectively addressed through the continued certification authorized in 40 CFR 413 and 433 of a solvent management plan in lieu of the required self-monitoring for toxic organics. General Magnaplate can generate surfactants and oil and grease.

4.4 Flammability

Flammability would not be expected because the discharges to the sewer are expected to entrain only negligible amounts of volatile organics.

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

Sewer collection system interferences related to the formation of hydrogen sulfide and the resulting acidic disintegration of the sewers are not expected because the wastewaters discharged to the sewers are not high-strength in biodegradable organics, and adjusted through the treatment to not be acidic in nature. However, the continuous final pH metering results should be reported because the neutralized discharges are initially composed of treated acidic and alkaline process wastewaters.



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).

Summary

The sample record for General Magnaplate involves twice per year self-monitoring and twice per year Ventura monitoring with each sampling event comprising four consecutive days. This practice should produce sample results that are representative of both the sampling day and the six-month reporting period. In particular, there are essentially two independent sources of pollutant loadings discharging into and through treatment to the sewers. The first source is on-demand running rinses which over the course of a sampling day would be accounted for through composite sampling. The second source is spent nickel-bearing static rinses which do not discharge every day but would be more likely to be accounted for over the course of a four-consecutive-day sampling event.

Requirements

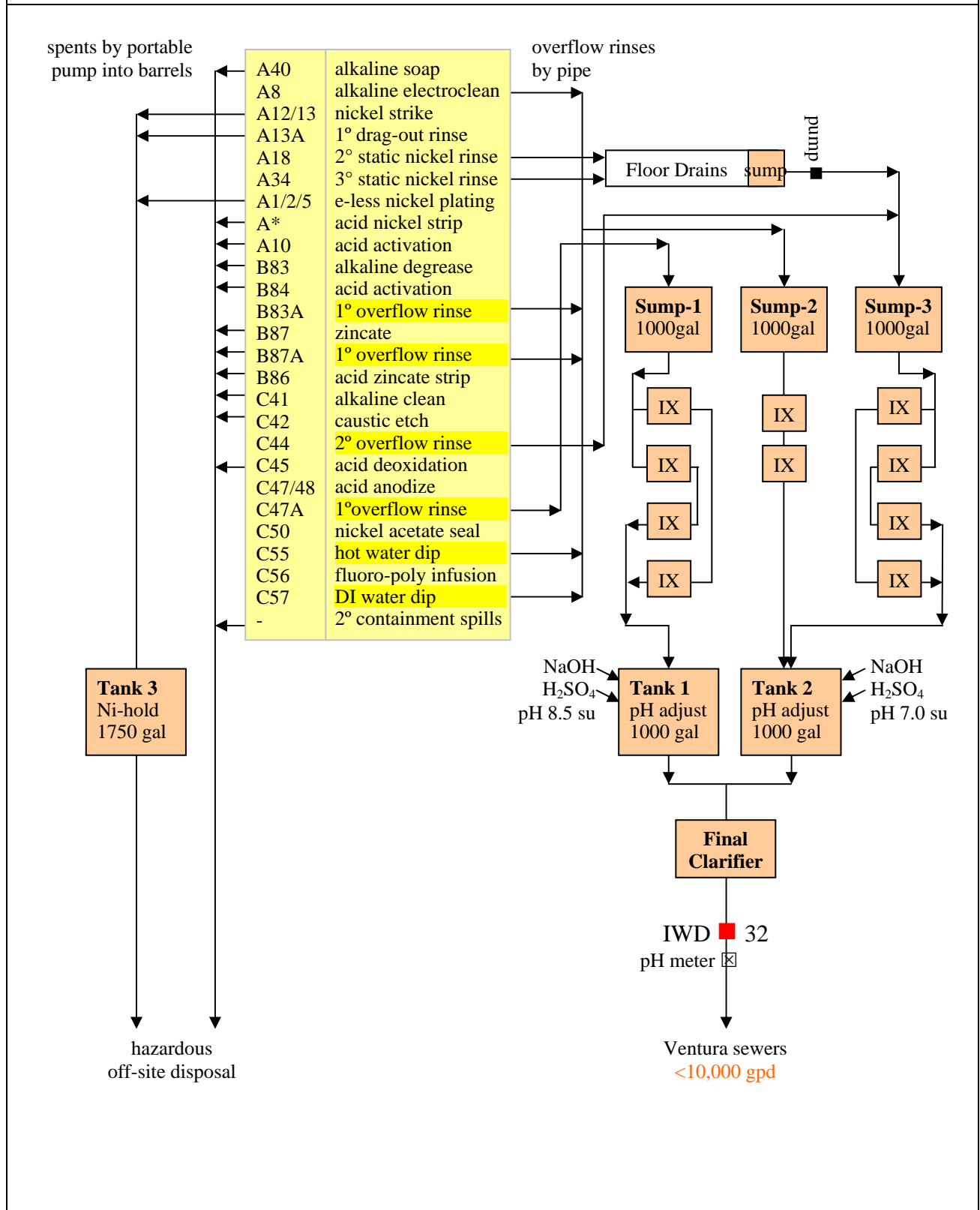
- None.

Recommendations

- See Appendix 2 for the recommended overall sampling schedule.
- The Ventura permit should require General Magnaplate to self-monitor at least once during every six-month reporting period on a sampling day when the spent nickel-bearing rinses are discharged into and through the treatment unit to the sewers.



Appendix 1
General Magnaplate
Schematic of the Wastewater Collection and Treatment





Appendix 2
Sewer Discharge Standards and Limits
General Magnaplate @ IWD-32

pollutants of concern (mg/l)	Federal categorical standards						local limits natl prohibs instant	recommn'd monitoring frequency
	Line B / <10k		Line B / >10k		Entire PSNS			
	d-max	mo-av	d-max	mo-av	d-max	mo-av		
arsenic	-	-	-	-	-	-	2.30	③
boron	-	-	-	-	-	-	20.0	③
cadmium	0.84	0.49	0.84	0.49	0.11	0.07	0.40	1/quarter
chromium	2.77	1.71	5.59	3.24	2.77	1.71	16.0	4/quarter
copper	3.38	2.07	4.13	2.49	3.38	2.07	17.0	4/quarter
lead	0.63	0.41	0.63	0.41	0.69	0.43	0.80	4/quarter
mercury	-	-	-	-	-	-	0.20	③
nickel	3.98	2.38	4.06	2.53	3.98	2.38	22.0	4/quarter
selenium	-	-	-	-	-	-	0.5	③
silver	0.43	0.24	0.43	0.24	0.43	0.24	2.30	1/quarter
zinc	2.61	1.48	3.67	2.23	2.61	1.48	14.0	4/quarter
total oil & grease	-	-	-	-	-	-	600	③
total cyanide or amenable cyanide (alt)	-	-	1.67	0.88	1.20	0.65	2.70	1/quarter
total toxic organics	3.62	1.91	0.86	0.32	0.86	0.32	-	③
total dissolved solids	2.13	-	3.76	-	2.13	-	-	④
total sulfides	-	-	-	-	-	-	-	1/quarter
chloride	-	-	-	-	-	-	0.10	③
sulfate	-	-	-	-	-	-	880	1/quarter
flow (gpd)	-	-	-	-	-	-	3660	1/quarter
pH (s.u.)	-	-	-	-	-	-	-	1/month
explosivity	-	-	-	-	-	-	6.0-9.5	continuous
temperature (°F)	-	-	-	-	-	-	① ②	③
	-	-	-	-	-	-	150°F	③

- ① National-prohibitions - Closed-cup flash point <140°F and pH <5.0 su.
- 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 Twice per year solvent management plan self-certifications in lieu of self-monitoring
- ⑤ Federal standards for multiple categories determined using the combined wastestream formula in 40 CFR 403.6(e). *See* Sections 2.1, 2.3 and 2.4 of this report for the equation input values.

$$C_{IWD32} = \frac{C_{433}Q_{433} + C_{413}Q_{413}}{Q_{433} + Q_{413}} + \frac{Q_{IWD32} - Q_{dilution}}{Q_{IWD32}}$$

C_{IWD32}	Fed standards at IWD-32
C_{433}	Fed stds 40 CFR 433
C_{413}	Fed stds 40 CFR 413
Q_{IWD32}	Flow rate at IWD-32
Q_{433}	Flow regulated 40 CFR 433
Q_{413}	Flow regulated 40 CFR 413
$Q_{dilution}$	Dilution flow 40 CFR 403.6

⑥ recommended monitoring frequencies green - decrease black - no change red - increase



Appendix 3

General Magnaplate @ IWD-32

Sampling Results from January 2005 – July 2006

pollutants ① (µg/l)	effluent sampling results			Fed violation rate		local	sample	loading
	mean	99th%	max	d-max	mo-av②	sample	count	(lbs/yr)
cadmium	<5.0	<5.0	<5.0	0/16	0/4	0/16	16	④
chromium	68	261	370	0/32	0/7	0/32	32	④
copper	171	944	1370	0/16	0/4	0/16	16	④
lead	73	361	360	0/32	0/7	0/32	32	④
nickel	1008	5152	8650	2/32	1/7	0/32	32	④
silver	8	24	24	0/16	0/4	0/16	16	④
zinc	95	322	430	0/16	0/4	0/16	16	④
total cyanide	15	44	40	0/20	0/5	0/20	20	④
total toxic organics	3	10	5	0/2	-	-	2	④ ⑤
TDS (mg/l)	1203	1672	1420	-	-	-	8	④
pH (s.u.)	7.1 ③	-	3.9 min 7.8 max	-	-	1/45	45	-

① no sample results for the following pollutants of concern: chloride, sulfate, oil & grease

② monthly-averages calculated by calendar month

③ pH median

④ mass loadings cannot be determined since EPA did not have flow rate data

⑤ self-monitoring replaced by semi-annual self-certifications