



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

September 16, 2011

In Reply Refer To: WTR-7

Gary Peel, Production Manager
Paris Precision
1650 Ramada Drive
Paso Robles, California 93446

Re: August 9, 2011 Clean Water Act Inspection

Dear Mr. Peel:

Enclosed is the September 16th report for our August 9, 2011 inspection of Paris Precision. Please submit a short response to the findings in Sections 2 through 5, to EPA, the City of Paso Robles, and the California Regional Water Quality Control Board, by **December 30, 2011**. The main findings are summarized below:

- 1** Paris Precision qualifies as new source metal finisher under 40 CFR 433 with one main non-domestic discharge point to the sewers and one secondary connection.
- 2** On-site treatment for the main discharge is equivalent to the models used in setting the Federal standards. The sample record is not yet long enough to demonstrate consistent compliance, although it is expected. Certain operational controls could improve performance, most notably the segregated handling of spents, and the removal of all bypass lines. Compliance with local limits is also expected for all pollutants except salinity, which will be addressed regionally by a new low-hardness municipal water supply.
- 3** The self-monitoring is not representative of the discharge because spents are unmetered through treatment, and not all process-related wastewaters discharge through a sampling point. Some pollutants present at low levels could be self-monitored less frequently.

I appreciate your helpfulness extended to me during this inspection. I remain available to the City of Paso Robles, 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,

Original signed by:

Greg V. Arthur
CWA Compliance Office

Enclosure

cc: Patti Gwathmey, Industrial Waste Manager, City of Paso Robles
Sorrel Marks, Central Coast RWQCB



U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User: Paris Precision, Inc.
1650 Ramada Drive, Paso Robles, California 93446
New Source Metal Finishing (40 CFR 433)

Treatment Works: City of Paso Robles Wastewater Treatment Plant
NPDES Permit No. CA0047953

Pretreatment Program: City of Paso Robles

Date of Inspection: August 9, 2011

Inspection Participants:

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

Central Coast RWQCB: None.

City of Paso Robles: Patti Gwathmey, Industrial Waste Manager, (805) 227-1654

Paris Precision: Gary Peel, Production Manager, (805) 591-1421
Heidi Changala, Quality Manager, (805) 239-2500 ext.117

Report Prepared By: Greg V. Arthur, Environmental Engineer
September 16, 2011



1.0 Scope and Purpose

On August 9, 2011, EPA and the City of Paso Robles conducted a compliance evaluation inspection of Paris Precision, Inc., in Paso Robles, 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.

Paris Precision is a significant industrial user ("SIU") within sewer service areas administered by the City of Paso Robles whose compliance was assessed as part of the 2011 EPA audit of the Paso Robles pretreatment program. The inspection participants are listed on the title page. Arthur conducted the inspection.

See Appendix 1(a) on page 17 for a schematic of the layout and configuration of wastewater handling. Also see Appendix 2 on page 18 for a process inventory. Photo documentation of this inspection follows in Section 1.7 on pages 5 and 6.

1.1 Process Description

Paris Precision fabricates sheet-metal parts and products from stainless steel, cold rolled steel, aluminum, and small amounts of copper and brass stock. The operations involve punch pressing, drilling, laser cutting, sheet metal forming, abrasion deburring, vibratory deburring, surface finishing, painting, electrostatic powder coating, and oven curing.

The surface finishing operations involve aluminum surface cleaning (alkaline clean, caustic etch, nitric-acid deoxidation, organosilane bond), steel passivation (phosphoric-acid desmut, alkaline soap clean, nitric-acid passivation), and steel phosphating in a can washing line (alkaline clean, iron phosphating). Support operations include silk screening, and water preconditioning through softening and reverse osmosis.

Paris Precision manufactures to customer specification but owns the parts manufactured on-site. Operations began at this site in 2003. Paris Precision discharges non-domestic wastewaters to the Paso Robles domestic sewers primarily through a single permitted sewer connection, although a small amount of drainage from silk screening discharges through a second unpermitted connection. Domestic sewage discharges through separate connections downstream of the industrial wastewater connection.

1.2 Facility SIC Code

Paris Precision is assigned the SIC codes for sheet metal work (SIC 3444) and metals coating (SIC 3479).



1.3 Facility Wastewater Sources

The surface finishing, can washing, and vibratory deburring lines, and the support operations generate spents, rinses, wash downs, bleeds, and residuals. There is one main non-domestic connection to the sewers that receives flow from the industrial wastewater treatment plant ("IWTP") as its only source. There is also a second connection to the sewers from a silk screening station. The 2011 Paso Robles permit identifies the main sewer connection but does not identify the second connection. The compliance sampling points are designated in this report as IWD-301.01 and IWD-301.02.

Surface Finishing - The aluminum cleaning line involves alkaline cleaning, caustic etch, nitric-acid deoxidation, and organosilane bonding. The steel passivation line involves phosphoric-acid desmut, alkaline soap clean, and nitric-acid passivation. See Photo #1 in Section 1.7 of this report on page 5.

- Spents - The imparted contamination from the processing of parts and the progressive drop in solution strength results in the generation of spents. Spent generation rates depend on bath usage, effectiveness of bath contamination control, and the amount of drag-out lost into the rinses or onto the floor. All steps except one generate spents, which are handled on-site through the infrequent (semi-annual) draining of the baths into the in-plant sewer system leading to treatment. The drained spents include the alkaline cleaners, caustic etchant, phosphoric-acid deoxidizer, and nitric-acid passivation. The organosilane bonding step is spray applied and does not generate spents but rather is regenerated through additions only. Losses from an "adds-only" step therefore must be through drag-out since baths without outlets would foul through contamination or fail through use.
- Rinses - The aluminum cleaning line employs either first- or first-and-second-stage low overflow rinses. The passivation line employs first-stage spray rinses and a final hot static rinse. All rinses drain into the in-plant sewer system leading to treatment.

Powder Coating Line - Powder coating of steel parts involves a can wash line, an electrostatic powder coat line, and a final curing oven. The automated spray can wash line involves six steps -- alkaline cleaning, first-stage rinse, iron phosphating, first-stage rinse, second-stage RO rinse, and a dry-off oven. Each wet step incorporates circulating sprays that are drawn from dedicated reservoir tanks. The reservoir tanks are periodically drained to the in-plant sewer system leading to treatment. See Photo #2 in Section 1.7 of this report on page 5.

Deburring - Four vibratory deburring units for small parts drain to a floor drain into the in-plant sewer system leading to treatment. Abrasion deburring of sheet metal involves a soap-based coolant which circulates through filter cloth into a dedicated reservoir tank. The soap-based coolant is regenerated only through additions. See Photos #3 and #4 in Section 1.7 of this report on page 5.

Other Operations - The machining areas generate no process-related wastewaters and have no floor drains. Floor spills are cleaned by dry adsorbent. The laser cutting unit



does not involve water "spark" catching. A water preconditioning unit drains softener brines and RO reject to a floor drain into the in-plant sewer system leading to treatment. A silk screen work sink drains into a separate domestic sanitary sewer that does not lead to the treatment unit. See Photos #5 and #6 in Section 1.7 of this report on page 6.

1.4 Facility Process Wastewater Handling

Delivery – Most process-related rinses, spents, and drainage are hard-plumbed to the IWTP. The wastewaters are not segregated by strength or treatability and drain by gravity into an inlet sump at the IWTP. Silk screen work sink contents drain directly into the sewers. See Photos #6, #7, and #8 in Section 1.7 of this report on page 6.

Composition - The process-related wastewaters discharged through IWD-301.01 would be expected to contain iron, aluminum, copper, chromium, nickel, zinc, and other metals removed from the alloyed-metal stock, as well as acidity, phosphates, nitrates, surfactants, pollutants cleaned off of parts, and the minerals entrained in the water supply. The silk screen drainage discharged through IWD-301.02 would be expected to contain solvent-based photo resist strippant, alkaline resist developer, and 'mylar' resist skins.

Treatment -The combined contents are pumped from the inlet sump into two 3,000 gallon surge tanks plumbed in series. The second surge tank overflows through three treatment tanks in series, for chromium reduction (decommissioned), metal hydroxide precipitation, and solids flocculation, followed by a Lamella clarifier. Clarifier effluent discharges to a surge tank for feed through two pressure sand filters. The sand filter discharges combine for discharge through a sample tank (IWD-301.01) to the sewer connection standpipe. A filter press dewateres clarifier solids with the filtrate discharged to the sewer connection standpipe. The inlet sump and the second surge tank have hard-piped bypasses to the sewer connection standpipe. The silk screening wash waters discharge untreated from the work sink (IWD-301.02) to the sewers. See Photos #9 and #10 in Section 1.7 of this report on page 6.

Discharge – Most process wastewaters from Paris Precision drain through a single sewer connection into the Paso Robles domestic sewers. Discharge from the IWTP is identified in the Paso Robles permit as the final compliance sample point, designated in this report, after the permit number as IWD-301.01. The specific location of the compliance sampling point is a sampling tank that receives the effluent from the two final sand filters. The sampling tank discharges to a vertical standpipe into the domestic sewers. Filter press filtrate and IWTP bypasses also connect to the standpipe but discharge into the domestic sewers without passing through the sampling tank. A second discharge from a silk screening work sink to the sewers is unidentified by the permit, but is designated here in this report as IWD-301.02. There is no effluent metering of the discharge flow rates. See Photos #6 and #10 in Section 1.7 on page 6.

Residuals - Abrasion deburring produces filtered slurries and spent filter paper for non-hazardous landfill disposal. The IWTP filter press produces filter cake for non-hazardous disposal. See Photos #4 and #9 in Section 1.7 of this report on pages 5 and 6.



1.5 Sampling Record

Paris Precision self-monitors monthly as required by the City of Paso Robles permit. there are only the self-monitoring results since May 2011 because the permit was first issued in April 19, 2011. The City of Paso Robles does not collect its own samples.

1.6 POTW Legal Authorities

The City of Paso Robles has enacted an ordinance to implement a pretreatment program in the areas serviced by the City's wastewater treatment plants. Under this authority, the City issued City permit No.301 authorizing discharge of non-domestic wastewater to the sewers.

1.7 Photo Documentation

Ten of the 14 photographs taken during this inspection are depicted below and saved as *parisprecision-001.jpg through -014.jpg*.



Photo #1: Aluminum Cleaning Line
Taken By: Greg V. Arthur
Date: 08/09/11



Photo #2: Paint Preparation Line
Taken By: Greg V. Arthur
Date: 08/09/11



Photo #3: Vibratory Deburring Line
Taken By: Greg V. Arthur
Date: 08/09/11



Photo #4: Abrasion Deburring Coolant Filtering
Taken By: Greg V. Arthur
Date: 08/09/11



Additional photographs taken during this inspection are depicted below.

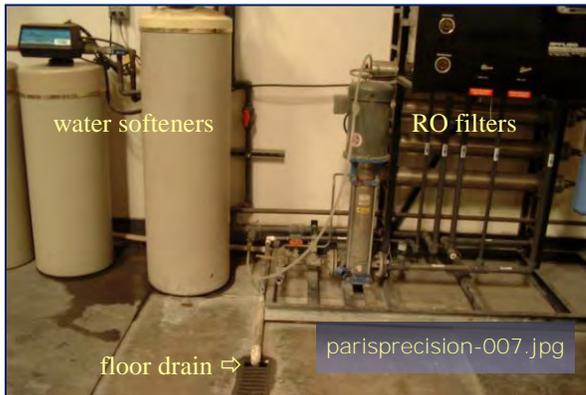


Photo #5: Water Preconditioning Units
Taken By: Greg V. Arthur
Date: 08/09/11



Photo #6: Discharge Point - IWD-301.02
Taken By: Greg V. Arthur
Date: 08/09/11

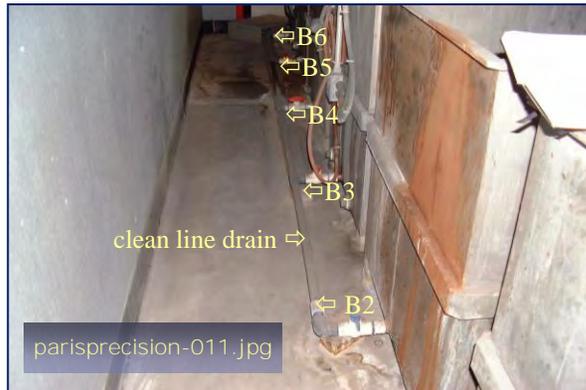


Photo #7: Hard-piped Delivery for Passivation Line
Taken By: Greg V. Arthur
Date: 08/09/11

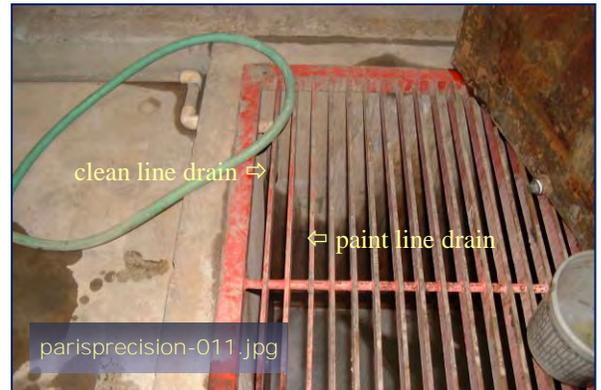


Photo #8: IWTP Inlet Sump
Taken By: Greg V. Arthur
Date: 08/09/11



Photo #9: IWTP to discharge to IWD-301.01
Taken By: Greg V. Arthur
Date: 08/09/11

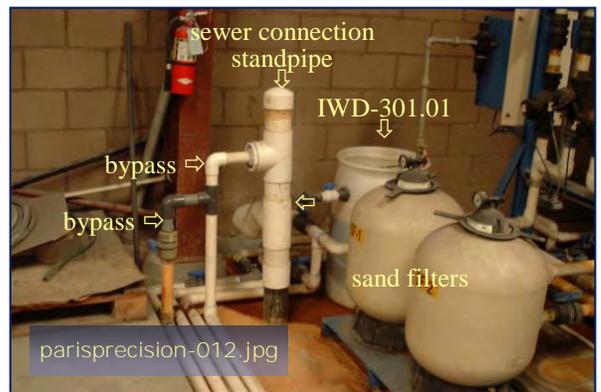


Photo #10: Discharge Point - IWD-301.01
Taken By: Greg V. Arthur
Date: 08/13/09



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

Summary

The Federal categorical pretreatment standards for new source metal finishing in 40 CFR 433 apply to the process wastewater discharges from Paris Precision. The 2011 Paso Robles permit applied the local limits and the Federal standards for new sources, but did not apply the Federal bypass provision against the bypassing treatment necessary to comply. The application of Federal categorical standards, national prohibitions, and local limits was determined through visual inspection. See Appendix 3 on page 20 of this report for the permit limits.

Requirements

- The Federal standards at IWD-301.01 must be adjusted to account for dilution from the specified dilution sources using the combined wastestream formula.
- The permit must apply the Federal bypass provision which prohibits the bypassing of any treatment necessary to comply with Federal standards and local limits.
- The permit must identify the second discharge to the sewer from silk screening, designated by EPA as IWD-301.02 in this report.

Recommendations

- Paris Precision should determine the average discharge flow rates for IWD-301.1 and IWD-301.02, and the percentage generated by dilution sources for IWD-301.01.
- The permit should require self-monitoring for the discharge flow rates.

2.1 Classification by Federal Point Source Category

Paris Precision qualifies as a metal finisher subject to the Federal metal finishing standards for new sources in 40 CFR 433. The 2011 Paso Robles permit appropriately applied the Federal standards. Federal standards are self-implementing which means they apply to regulated wastestreams whether or not they are implemented in a local permit. The Federal rules in 40 CFR 403.6 define domestic sewage and non-contact waters as dilution waters.

New or Existing Sources – In 40 CFR 403.3(k), a metal finishing process constructed 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. The preamble to the 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*). So after the 1982 deadline, the new source standards apply to the new installation of metal finishing lines, rebuilt or moved lines, lines temporarily removed to install secondary containment, or existing lines converted to do new operations. New source standards generally do not apply to the piecemeal replacement of tanks for maintenance in otherwise intact metal finishing 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 Paso Robles local limits apply to non-domestic discharges in the service areas of the City wastewater treatment plant.

2.3 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 chemical coating, and etching. The metal finishing standards “... apply to plants that perform ...” the core operations of electroplating, electroless plating, etching, anodizing, chemical coating (passivation, phosphating), or printed circuit board manufacturing and they extend to other on-site operations, such as cleaning, machining, shearing, polishing, painting (including silk screening), and electrostatic painting, 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 all discharges to IWD-301.01 and IWD-301.02.

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 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 – See Section 2.4 on below for the adjustments in the standards for multiple categories, dilution, cyanide, and toxic organics monitoring.

Compliance Deadline – New sources are required to comply on the first day of discharge.

2.4 Combined Federal Standards and Adjustments

The Federal categorical pretreatment standards must be adjusted to account for dilution, if it exists, and for multiple Federal categories, if more than one applies. See Appendix 3 on page 20 of this report for the permit limits.

Multiple Categories – Only one Federal category for new source metal finishing applies to the discharges from Paris Precision.

Dilution – Under 40 CFR 403.6(d)(e), Federal categorical pretreatment standards must be adjusted using the combined wastestream formula (shown below) to account for any dilution from non-contact cooling waters, boiler blowdown, water preconditioning, and domestic sewage. These flows, which are specifically listed as dilution waters in 40 CFR 403.6(e), were not identified in the permit. The Federal standards need to be adjusted by an as of yet indeterminate amount of dilution from the softener brines and RO reject.

$$C_{\text{total}} = \frac{(C_{433} \cdot Q_{433})}{Q_{433}} \times \frac{(Q_{\text{total}} - Q_{\text{dilution}})}{Q_{\text{total}}}$$

C_{433} = Fed stds 40 CFR 433
 Q_{total} = Total Flow
 Q_{dilution} = Dilution Flow

Cyanide Standards – Under 40 CFR 433.12(c), the cyanide standards as applied to new source metal finishing wastewater discharges are to be adjusted to account for dilution from non-cyanide bearing waste streams. However, since there are no cyanide-bearing sources, the cyanide standards apply by default without adjustment.

Toxic Organics Standards – The Federal standards in 40 CFR 433.12 allow facilities with an approved toxic organics management plan to certify instead of sample for toxic organics. Paris Precision self-monitors for total toxic organics at IWD-301.01 once per month. No samples are collected at IWD-301.02.

2.5 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 2011 Paso Robles permit establishes the prohibition



against the dilution as a substitute for treatment (Part II.7), does not prohibit the bypassing of any treatment necessary to comply.

2.6 Compliance Sampling and Point(s) of Compliance

The permit designates the outlet of the final sand filter step of the industrial wastewater treatment plant inside the facility as the location of the compliance sampling point following industrial wastewater treatment for nearly all facility wastewaters (designated in this report as IWD-301.01). The permit does not identify the compliance sampling point for the separate silk screening work sink discharge (designated in this report as IWD-301.02).

Federal Standards - Federal categorical pretreatment standards apply end-of-process-after-treatment to all Federally-regulated discharges to the sewers. Together both compliance sample points for discharge to the sewers, IWD-301.01 and IWD-301.02, are largely suitable end-of-process-after-treatment sample point representative of the day-to-day discharge of Federally-regulated wastewaters from Paris Precision, although there are IWTP return flows and hard-piped bypasses that do not discharge through the compliance sample points. These points are also suitable end-of-process-after-treatment sample points for cyanide, as long as there are no cyanide-bearing flows discharging to the sewers. See Section 3.5 and 5.0 on pages 13 and 16 of this report for findings pertaining to the bypass provision and representative sampling.

Local Limits - Local limits and the national prohibitions apply end-of-pipe to non-domestic flows. The sample points IWD-301.01 and IWD-301.02 are largely suitable end-of-pipe sample point representative of the day-to-day non-domestic wastewater discharges from Paris Precision, although there are IWTP return flows and hard-piped bypasses that do not discharge through the compliance sample points.

Sampling Protocols - The national prohibitions are instantaneous-maximums comparable to samples of any length. Federal categorical pretreatment standards are daily-maximums comparable to 24-hour composites. The 24-hour composites can be replaced with single grabs or manually-composited grabs representative of the sampling **day's discharge**. The 2011 City of Paso Robles permit specifies these sampling protocols by parameter (page 2). See Section 5.0 on page 16 and Appendix 3 on page 20.



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).

Paris Precision employs industrial wastewater treatment equivalent to the models used in originally setting the Federal standards for almost all of its wastewater discharges to the sewers. Performance benefits from weak-strength wastewaters. Built-in bypass lines compromises treatment. Reliability and performance could improve through the installation of a number of built-in operational controls. The Federal standards are not yet adjusted downward to account for dilution and there are not enough sampling results yet to determine whether Paris Precision can consistently comply with the Federal standards as adjusted for dilution at both discharge points.

See Appendix 1(b) on page 18 of this report for a schematic of recommended upgrades. Also see Appendix 4 on page 21 for a summary of the compliance sampling.

Requirements

- The built-in bypass lines must be removed.

Recommendations

- Spent solutions should be segregated by dedicated hard-piping to a batch holding and treatment tank for metered feed through the filter press.
- Filter press filtrate should be returned into the inlet sump.
- The bypass line from the inlet sump to the sewer connection should be replaced with an emergency shunt line to the unused second holding tank.
- The bypass line from the third holding tank to the sewer connection could be retained if it is valved closed and locked-out tagged-out.

3.1 Sampling Results

The sample record consists of only three monthly self-monitoring results for IWD-301.01. There are no self-monitoring results for IWD-301.02. There are no samples collected by the City of Paso Robles from IWD-301.01 or IWD-301.02.



3.2 Best-Available-Technology Treatment for IWD-301.01

Nearly all process-related wastewaters generated by Paris Precision discharge from the industrial wastewater treatment plant ("IWTP") at IWD-301.01 into the main sewer connection. The treatment in-place is designed and operated to be equivalent to the best-available-**technology ("BAT")** model treatment for metal finishing. Consistent compliance with the Federal standards cannot be determined with confidence, however, because (1) the Federal standards are not yet adjusted downward to account for dilution, (2) the sampling is not representative of all discharges over the entire reporting period, and (3) the sampling record is not sufficiently long enough to confirm equivalence in performance to the model best-available-technology ("BAT") treatment units used in originally setting the Federal standards for metal finishing.

Nevertheless, the two samples taken from IWD-301.01 after the issuance of the Paso Robles permit likely were in compliance with Federal standards (depending on the size of the adjustment for dilution), with peak concentrations well below the unadjusted standards: <0.0002 mg/l cadmium, 0.012 mg/l chromium, 0.058 mg/l copper, 0.0012 mg/l lead, 0.006 mg/l nickel, <0.001 mg/l silver, 0.040 mg/l zinc, <0.004 mg/l total cyanide, and 0.180 mg/l total toxic organics.

While consistent compliance with the Federal standards cannot be determined as of yet, consistent compliance would be expected, not only because the treatment in-place is equivalent in design to the model treatment, but also because wastewaters from the cleaning, passivation, and iron phosphating lines arrive at much lower concentrations in metals and cyanide than from typical metal finishing steps like electroplating, chromium conversion coating, and zinc phosphating. Nevertheless, a few deficiencies in the design and operation were observed during this inspection. The improvements (+) to and deficiencies (-) in performance are listed below.

- + Generates wastewaters with low concentrations of toxic metals and cyanide.
- + Excellent chemically-aided Lamella clarifier capacity.
- + Clear labeling of tankage and knowledge of wastewater generation and treatment.
- + Hard-piped delivery of nearly all wastewaters to the inlet collection sump.
- No segregated handling of spent solutions for metered feed through treatment.
- Discharge of filter press filtrate to the sewer past the sample point.
- Reaction end-point metering not telemetered to alarms or remote alerts.
- Built-in bypass lines from the inlet sump, filter press, and the third holding tank.

3.3 Best-Available-Technology Treatment for IWD-301.02

Silk screening sink drainage would not be expected to require model treatment to comply with Federal standards. Nevertheless, the capture and delivery of sink drainage to the IWTP would eliminate discharge and self-monitoring at IWD-301.02, thereby ensuring compliance. See Section 5.0 on page 16 for self-monitoring requirements.



3.4 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.

There is no evidence of "dilution as a substitute for treatment" since all Federally-regulated waters except the low-strength low-volume silk screening wastewaters discharge through BAT model treatment to the sewers at IWD-301.01.

3.5 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 are built-in methods of bypassing at Paris Precision. In particular, the inlet sump pump splits into three lines, with one line hard-piped directly for discharge to the main sewer connection immediately below and after the IWD-301.01 sampling tank. Furthermore, the filter press filtrate return line and a drain line from the third of three influent holding tanks together also drain by hard-pipe directly for discharge to the main sewer connection after IWD-301.01. Both bypass lines were valved closed. However, their existence allows the direct discharge without treatment of all wastewaters generated by Paris Precision.

The City ordinance and permit lack the prohibition against bypassing of treatment necessary to comply. Nevertheless, Paris Precision cannot use the built-in methods of bypassing without violating the Federal prohibition in 40 CFR 403.17(d). As a result, if Paris Precision needs an ability to shut down treatment without a shutting down operations, these bypass methods must be replaced with emergency impoundment capacity and a re-plumbing of all return lines to the inlet sump. Furthermore, if Paris Precision determines that a bypass line is still needed, it should be valved locked-out and tagged-out closed, in order to prevent its inadvertent use.



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 Paris Precision can comply with its local limits for metals, cyanide, organics, and pH, but not for salinity. Salinity issues in San Luis Obispo County stem from the widespread use of water softeners. As a result, Paso Robles and other communities in the county, under a RWQCB Time Schedule Order, are constructing a surface water treatment plant and delivery pipeline for low-hardness water from Lake Nacimiento. The new water supply, expected on-line in 2015, should result in relaxed local limits for salinity. See Appendix 4 on page 21 of this report.

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 inspection did not include an evaluation of whether achievement of the national objectives in 40 CFR 403.2 have been demonstrated by the Paso Robles 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

Metals and Cyanide – For the main discharge at IWD-301.01, there were no violations of the local limits for cadmium, chromium, copper, cobalt, lead, molybdenum, nickel, selenium, silver, zinc, and cyanide. For the silk screening sink drainage at IWD-301.02,



there were no sample results. However, silk screening drainage would not be expected to contain metals or cyanide at levels approaching the local limits. As a result, there is no evidence that these discharges resulted in the operational interference of the Paso Robles collection systems and wastewater treatment plant.

High-Strength Organics - The process-related wastewaters discharged from Paris Precision 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.

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

Metals and Cyanide - For the main discharges at IWD-301.01, there were no violations of the local limits for cadmium, chromium, copper, cobalt, lead, molybdenum, nickel, selenium, silver, zinc, and cyanide. There were no sample results for the silk screening discharge at IWD-301.02, however these flows would not be expected to contain metals or cyanide at levels approaching the local limits. As a result, there is no evidence that these discharges resulted in a pass-through of pollutants from the Paso Robles wastewater treatment plant to the receiving waters.

Toxic Organics and Oils - For the main discharges at IWD-301.01, there were no violations of the local limits for any toxic organics or oil and grease. For the silk screening discharge, IWD-301.02, there were no sample results, however these flows would not be expected contain toxic organics or oil and grease at levels approaching the local limits.

Salinity and Minerals - For the main discharges at IWD-301.01, all samples exceeded the local limits for total dissolved solids, sulfates, and sodium. There are two principal sources of salinity, water softener brines, and the IWTP neutralization of acids and alkalines. Low-TDS treatment usually involves either the off-hauling of high-TDS spent solutions or their regeneration through physical processes such as low-temperature caustic desaturation and acid ultrafiltration. Salinity from softeners should no longer be a water quality issue upon start-up of the low-hardness municipal water supply.

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

Corrosion - Sewer collection system interferences related to the formation of hydrogen sulfide and the resulting acidic disintegration of the sewers are not expected. The wastewaters discharged to the sewers are not high-strength in biodegradable organics. The main discharge through IWD-301.01 is not expected to exceed pH limits since it is composed of treated acidic and alkaline wastewaters. The second discharge through IWD-301.02 is insignificant in volume to affect the pH in the sewers.

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 – Paris Precision has successfully fulfilled the self-monitoring requirements set forth in the city permit. The sample record for the main discharge point, IWD-301.01, shows that Paris Precision (1) submitted sample results for all permit-listed parameters at the frequencies set forth in the permit, (2) collected all samples from the designated compliance sampling point, and (3) correctly obtained 24-hour composites for metals and grabs for the other pollutants. It was not determined in this inspection whether appropriate chain-of-custody procedures were followed. There were no sampling requirements in the permit for the second discharge point, IWD-301.02. Some of the parameters for pollutants that are not generated could be self-monitored less frequently.

Representativeness – For three reasons, the sample record is not representative of the discharge to the sewers over both the sampling day and the six-month reporting period. First, spent solutions are not segregated for metered feed through treatment, which means additional samples must be collected when each of the spent solutions are drained through treatment. Second, not all process-related wastewaters discharge through a sampling point, including and especially the consistently generated filter press filtrate. Third, the silk screening sink drainage is not sampled.

Requirements

- See Appendix 3 on page 20 of this report for the self-monitoring and city monitoring requirements for that would be considered to be representative of the discharges.

Recommendations

- The silk screening sink drainage should be captured and delivered by drum into the IWTP inlet sump, thereby eliminating the required self-monitoring for IWD-301.02.
- Self-certification statements should include copies of the hazardous waste manifests documenting the off-hauling of spents, and residuals.
- See Sections 3.0 and 3.2 on pages 11 and 12 of this report for findings regarding the metered handling of spent solutions through treatment and IWD-301.01.
- See Section 3.0 and 3.5 on pages 11 and 13 of this report for findings regarding the elimination of all bypassed discharges around treatment and IWD-301.01.



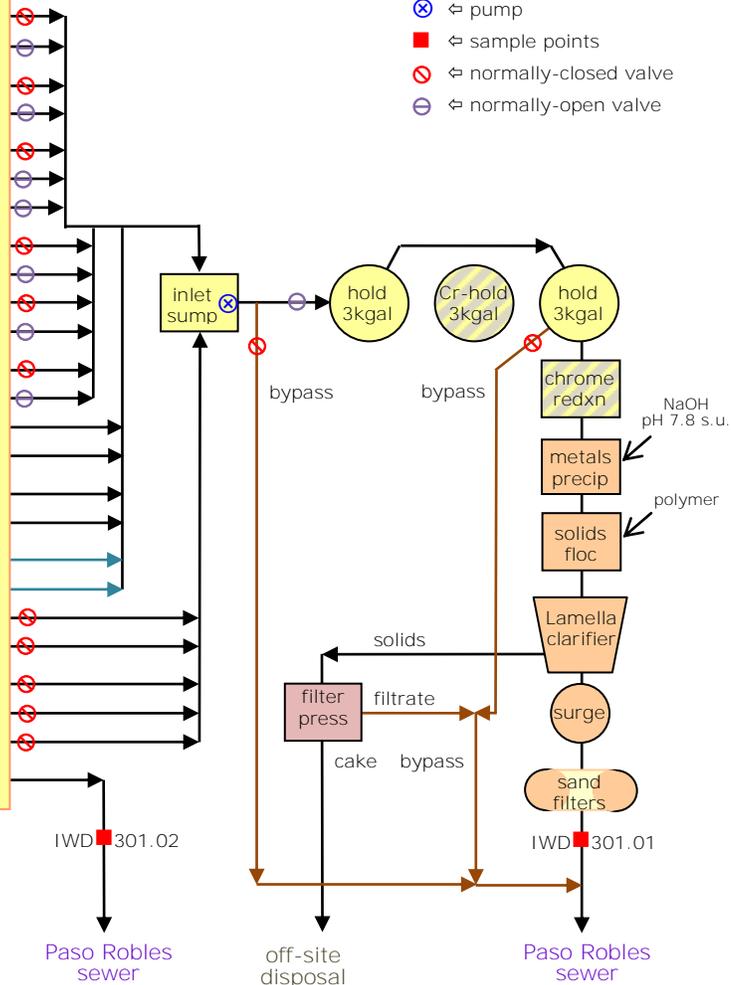
Appendix 1(a)

Paris Precision - Current Configuration and Layout

Metal Processing Lines

- A1 - alkaline clean spents
- A2 - 1° rinse for A1
- A3 - caustic etch spents
- A4 - 1° rinse for A3
- A5 - H₃PO₄ deox spents
- A6 - 1° rinse for A5
- A8 - 2° overflow for A5
- P1 - H₃PO₄ desmut spents
- P2 - 1° spray rinse for P1
- P3 - hot alk soap spents
- P4 - 1° spray rinse for P3
- P5 - HNO₃ passivate spents
- P6 - hot static rinse
- D1 - deburring tail water
- D2 - deburring tail water
- D3 - deburring tail water
- D4 - deburring tail water
- D5 - softener brine
- D6 - RO reject
- F1 - alk clean spray spents
- F2 - 1° spray rinse for F1
- F3 - Fe₃PO₄ spray spents
- F4 - 1° spray rinse for F3
- F5 - 2° RO spray for F3
- S1 - silk screen sink

- ⊗ ⇌ pump
- ⇌ sample points
- ⊘ ⇌ normally-closed valve
- ⊖ ⇌ normally-open valve



Paso Robles sewer

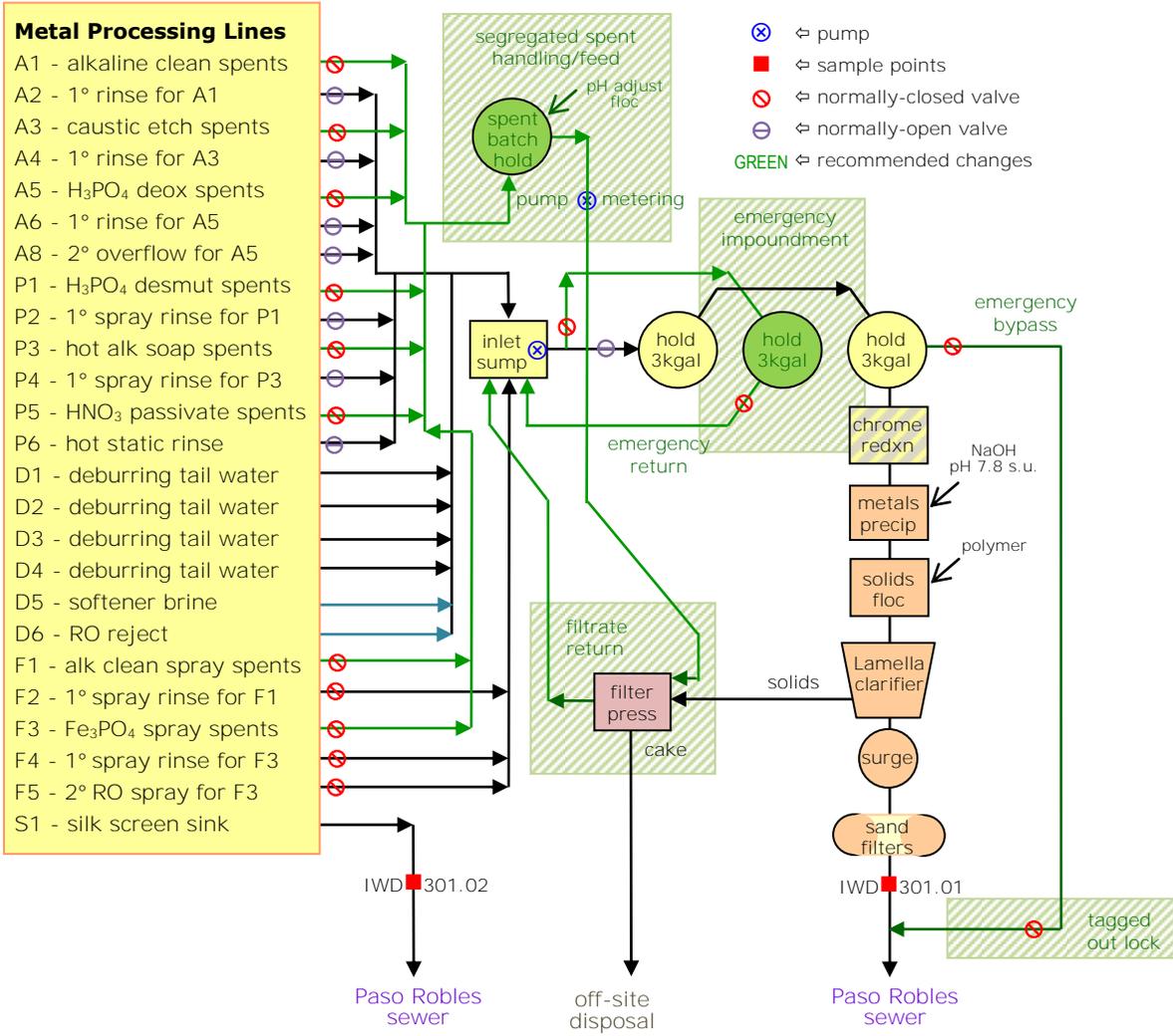
off-site disposal

Paso Robles sewer



Appendix 1(b)

Paris Precision - Recommended Configuration and Layout





Appendix 2							
Paris Precision - Tank Inventory, Tank Number, Volume, and Delivery Method							
Delivery ✓	Tank Designations and Contents			Delivery ✓	Tank Designations and Contents		
Aluminum Cleaning Line				Stainless Steel Passivation Line			
sewer 01	A1	alkaline cleaner	2872 gal	adds only	P1	phosphoric-acid desmut	~80 gal
sewer 01	A2	1° low-overflow for A1	1436 gal	sewer 01	P2	1° spray rinse for P1	n/a
sewer 01	A3	caustic etching	1436 gal	sewer 01	P3	hot alkaline soap cleaning	202 gal
sewer 01	A4	1° low-overflow for A3	1436 gal	sewer 01	P4	1° spray rinse for P3/P5	n/a
sewer 01	A5	phosphoric-acid deox	1436 gal	sewer 01	P5	nitric-acid passivation	202 gal
sewer 01	A6	1° low-overflow for A5	1436 gal	sewer 01	P6	hot static rinse	202 gal
n/a	A7	decommissioned	1436 gal	Vibratory Deburring Line and Water Preconditioning			
sewer 01	A8	2° low-overflow for A5	1436 gal	sewer 01	D1	deburring unit tail water	~20 gal
adds only	A9	organosilane bulk spray	n/a	sewer 01	D2	deburring unit tail water	~20 gal
Iron Phosphate Can Cleaning Line				sewer 01	D3	deburring unit tail water	~20 gal
sewer 01	F1	alkaline clean recirc spray	1265 gal	sewer 01	D4	deburring unit tail water	~20 gal
sewer 01	F2	1° recirc spray - bleed for F1	1200 gal	sewer 01	D5	water softener brine	n/a
sewer 01	F3	iron phosphate recirc spray	1200 gal	sewer 01	D6	RO reject water	n/a
sewer 01	F4	1° recirc spray - bleed for F3	1200 gal	Silk Screening Room			
sewer 01	F5	2° RO spray - bleed for F3	1200 gal	sewer 02	S1	silk screening work sink	n/a
✓ sewer 01 – in-plant sewer drain line to the IWTP for discharge to the City sewer (IWD-301.01)							
✓ sewer 02 – in-plant sanitary sewer drain line to the City sewer (IWD-301.02)							
✓ adds only – additions only so no discharge to the City sewer							



Appendix 3

Sewer Discharge Standards and Limits for Paris Precision @ IWD-301.01 and 301.02

Pollutants of Concern	Fed stds (d-max)	Fed stds (mo-avg)	nat'l pro (instant)	local lim (inst/dmax)	monitoring frequency ①⑥		
					IWD-301.01	IWD-301.02	Paso Robles
cadmium (mg/l)	0.11	0.07	-	0.10	1/quarter	2/year	1/year ⑤
chromium (mg/l)	2.77	1.71	-	3.70	1/quarter	2/year	1/year ⑤
cobalt (mg/l)	-	-	-	0.075	③	-	-
copper (mg/l)	3.38	2.07	-	0.30	1/quarter	2/year	1/year ⑤
lead (mg/l)	0.69	0.43	-	-	1/quarter	2/year	1/year ⑤
molybdenum (mg/l)	-	-	-	1.10	③	-	-
nickel (mg/l)	3.98	2.38	-	1.90	1/quarter	2/year	1/year ⑤
selenium (mg/l)	-	-	-	0.27	③	-	-
silver (mg/l)	0.43	0.24	-	-	1/quarter	2/year	1/year ⑤
zinc (mg/l)	2.61	1.48	-	4.00	1/quarter	2/year	1/year ⑤
total cyanide (mg/l)	1.20	0.65	-	0.01	2/year	2/year	1/year ⑤
total toxic organics (mg/l)	-	2.13	-	-	2/year ②	2/year ②	1/year ⑤②
ammonia (mg/l)	-	-	-	20.0	2/year	-	-
boron (mg/l)	-	-	-	5.0	③	-	-
oil and grease (mg/l)	-	-	-	100	2/year	-	1/year ⑤
sulfate (mg/l)	-	-	-	200	1/month	-	1/year ⑤
total suspended solids (mg/l)	-	-	-	360	③	-	-
total dissolved solids (mg/l)	-	-	-	1000	1/month	-	1/year ⑤
sodium (mg/l)	-	-	-	200	1/month	-	1/year ⑤
chloride (mg/l)	-	-	-	150	1/month	-	1/year ⑤
biochem oxy demand (mg/l)	-	-	-	360	③	-	-
temperature (°F)	-	-	-	150°F	③	-	-
pH (s.u.)	-	-	<5.0	6.0-9.0	1/month	2/year	1/year ⑤
explosivity	-	-	<140°F ④	<140°F ④	③	-	-

① Recommended reductions in green. Recommended increases in red.

② Self-certification to following an approved toxic organics management plan is allowed in lieu of sampling. A City inspection could then qualify as an independent determination.

③ As part of periodic priority pollutant scans in order to identify changes in discharge quality.

④ Closed-cup flashpoint.

⑤ Twice -per year city monitoring could replace two self-monitoring samples per year.

⑥ Representative sampling requires either metered feed of spents or duplicate monitoring when spents discharge.



Appendix 4

Wastewater Discharge Quality for Paris Precision

Sample Record Summary (04/16/11 -)

pollutants	IWD-301.01 sampling results				IWD-301.01 violation rate			sample count
	7/1/11	6/14/11	5/13/11	mean	Fed d-max	Fed mo-av	Loc d-max	
cadmium (µg/l)	<0.2	-	<0.2	<0.4	0/2	0/2	0/2	2
chromium (µg/l)	12	-	<1	6.2	0/2	0/2	n/a	2
cobalt (µg/l)	0.7	-	0.3	0.5	n/a	n/a	0/2	2
copper (µg/l)	58	-	16	37	0/2	0/2	0/2	2
lead (µg/l)	0.4	-	1.2	0.8	0/2	0/2	n/a	2
molybdenum (µg/l)	155	-	5	80	n/a	n/a	0/2	2
nickel (µg/l)	6	-	4	5	0/2	0/2	n/a	2
selenium (µg/l)	10	-	<2	5.5	n/a	n/a	0/2	2
silver (µg/l)	<1.0	-	<1.0	<1.0	0/2	0/2	n/a	2
zinc (µg/l)	30	-	40	35	0/2	0/2	n/a	2
total cyanide (µg/l)	<4	-	<4	<4	0/2	0/2	0/2	2
total toxic organics (µg/l)	89	-	180	135	0/2	0/2	n/a	2
ammonia (mg/l)	0.3	-	0.7	0.5	n/a	n/a	0/2	2
boron (mg/l)	0.1	-	0.23	0.17	n/a	n/a	0/2	2
oil and grease (mg/l)	6	-	4	5	n/a	n/a	0/2	2
sulfate (mg/l)	1340	870	3140	1783	n/a	n/a	3/3	3
total suspended solids (mg/l)	20	-	69	45	n/a	n/a	0/2	2
total dissolved solids (mg/l)	2130	1700	3310	2380	n/a	n/a	3/3	3
sodium (mg/l)	464	344	450	419	n/a	n/a	3/3	3
chloride (mg/l)	70	-	36	53	n/a	n/a	0/2	2
biochem oxy demand (mg/l)	<65	35.8	152	77	n/a	n/a	0/3	3
temperature (°C)	76.3	-	71.6	74.0	n/a	n/a	0/2	2
explosivity	-	-	-	-	-	-	-	0
pH (s.u.)	6.76	-	6.76	6.8	n/a	n/a	0/2	1

Violations (04/19/11 -)

sample dates	type	sampler	point	Fed standards / local limits	viols	days
07/01/11	24-h	IU	301.01	sulfate - local d-max 200 mg/l	1340	1
07/01/11	24-h	IU	301.01	sodium - local d-max 200 mg/l	464	1
07/01/11	24-h	IU	301.01	TDS - local d-max 1000 mg/l	2130	1
06/14/11	24-h	IU	301.01	sulfate - local d-max 200 mg/l	870	1
06/14/11	24-h	IU	301.01	sodium - local d-max 200 mg/l	344	1
06/14/11	24-h	IU	301.01	TDS - local d-max 1000 mg/l	1700	1
05/13/11	24-h	IU	301.01	sulfate - local d-max 200 mg/l	3140	1
05/13/11	24-h	IU	301.01	sodium - local d-max 200 mg/l	450	1
05/13/11	24-h	IU	301.01	TDS - local d-max 1000 mg/l	3310	1
total days of violation						9