

US EPA ARCHIVE DOCUMENT



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

December 8, 2009

In Reply Refer To: WTR-7

Hector Cruz, Manager
Arizona MPP Corporation
230 South 49th Avenue
Phoenix, Arizona 85043

Re: August 12, 2009 Clean Water Act Inspection

Dear Mr. Cruz:

Enclosed is the December 8, 2009 report for our August 12, 2009 inspection of Arizona MPP. Please submit a short response to the findings in Sections 2 through 5, to EPA, the City of Phoenix, and ADEQ, by **January 30, 2010**. The main findings are summarized below:

- 1** Arizona MPP 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. The local Phoenix permit does not apply the four-day average standards from 40 CFR 413.
- 2** On-site treatment is equivalent to the models used in setting the Federal standards. Performance is improved by redundant batch settling tanks, and low-metals bearing sources, but impaired by ponding within secondary containment, and undersized equalization. The past two years of sampling has demonstrated consistent compliance with all Federal standards and local limits. However, occasional high suspended solids levels and wide swings in pH are potential indications of bypassed or malfunctioning treatment.
- 3** Self-monitoring is representative over the sampling day and reporting period. Some pollutants near their method detection limits could be self-monitored less frequently at the Federal twice per year minimum. The pH should be self-monitored continuously.

I appreciate the helpfulness extended to me during this inspection by your facilities maintenance lead, Bill Mattingly. I remain available to the City of Phoenix, 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: Marji Dukowitz, Senior WQ Inspector, City of Phoenix
Moses Olade, Environmental Hydrologist, ADEQ



U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User: Arizona MPP Corporation
230 South 49th Avenue, Phoenix, Arizona 85043
Existing Source Job-Shop Electroplating (40 CFR 413)

Treatment Works: City of Phoenix
91st Avenue Wastewater Treatment Plant
NPDES Permit No. AZ0020524

Pretreatment Program: City of Phoenix

Date of Inspection: August 12, 2009

Inspection Participants:

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

Arizona DEQ: None

City of Phoenix: Andrea Cooper, Senior WQ Inspector, (602) 534-1362
Marji Dukowitz, Senior WQ Inspector, (602) 534-2077

Arizona MPP: Bill Mattingly, Facility Maintenance Lead, (650) 319-5030

Report Prepared By: Greg V. Arthur, Environmental Engineer
December 8, 2009



1.0 Scope and Purpose

On August 12, 2009, EPA and the City of Phoenix conducted a compliance evaluation inspection of Arizona MPP Corporation in Phoenix, Arizona. 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.

Arizona MPP is a significant industrial user (“SIU”) within sewer service areas administered by the City of Phoenix 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

Arizona MPP is a job-shop aluminum finisher at 230 South 49th Avenue in Phoenix. The operations involve a large-tank bright dip line and a large-tank anodizing line. Arizona MPP does not own the parts it finishes. Operations began before 1982. Arizona MPP discharges non-domestic wastewaters to the Phoenix domestic sewers through a single sewer connection designated in this report by permit number as IWD-5335. Domestic sewage discharges through separate connections downstream of the industrial wastewater connection. See Appendix 1 on page 15 for a schematic of the configuration and layout of wastewater handling. Also see Appendix 2 on page 15 for a process tank inventory. Photo documentation of this inspection follows in Section 1.7 on pages 4 and 5.

1.2 Facility SIC Code

Arizona MPP is assigned the SIC code for plating, polishing, anodizing, and coloring (SIC 3471) and metals coating (SIC 3479).

1.3 Facility Wastewater Sources

The anodizing and bright dipping lines generate spents, rinses, wash waters, spills, and residuals. Tank rinses overflow and solution spents are drained to the surrounding secondary containment pad for pumped feed through the industrial wastewater treatment plant for discharge to the sewers. See Appendix 2 on page 15 for lists of generated spents, rinses, wash waters, and residuals, and the methods of their on-site handling. Also see the photo documentation in Section 1.7 on pages 4 and 5.



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. All spents are handled on-site through drainage to treatment.

Rinses – Arizona MPP primarily employs first-stage overflow rinsing but also follows certain processing steps with first-stage drag-outs or multiple-stage rinses. All rinses, wash waters, and spill undergo on-site treatment.

Residuals – Arizona MPP generates spent carbon, filter cartridges, board drilling dust, and industrial wastewater treatment sludges for off-site disposal as hazardous.

1.4 Facility Process Wastewater Handling

Discharge – Process and domestic wastewaters from Arizona MPP drain through a single sewer connection into the Phoenix domestic sewers. A final Parshall flume sample vault located in the southeast corner of the building is identified in the Phoenix permit as the final compliance sample point, designated for the purposes of this report, after the permit number as IWD-5335. The permit establishes the average discharge as 130,000 gpd. Effluent metering averaged 19,525 gpd since 2007. See Appendix 1 on page 15 for the configuration and layout. Also see Photo #9 in Section 1.7 on page 5.

Composition - The process-related wastewaters listed in section 1.3 above would be expected to contain aluminum, alloying elements (*copper, zinc, manganese, magnesium*), oily waters (*lube, press leakage, grime*), acidity, alkalinity, surfactants, pollutants cleaned off of parts, and the minerals entrained in the water supply.

Delivery – All wastewaters discharged from Arizona MPP, both rinses and spent, are drained onto the secondary containment pad for collection into treatment. See Photos #2, #6, #7 and #8 in Section 1.7 of this report on pages 4 and 5. Also see Section 3.2 on page 9.

Treatment – Treatment consists of the collection of combined wastewaters into a chemical reaction tank for pH adjustment and introduction of flocculant, followed by two 8,000-gallon settling tanks. The settling tank decants drain to a 5,000-gallon decant tank for discharge through a Parshall flume sampling station to the Phoenix sewers. The settling tank solids are drawn through a filter press with the filtrate discharged into the final decant tank to the sewers. The filter press cake is off-hauled as hazardous for disposal. See Appendix 1 on page 15 of this report. Also see Sections 3.2 and 3.3 of this report on pages 9 and 10, as well as Photos #3, #4, #5, and #6 in Section 1.7 of this report on pages 4 and 5.

1.5 Sampling Record

Arizona MPP self-monitors from twice/week to once/six-months depending on parameter as required by the City of Phoenix permit. The Phoenix also collects its own samples monthly.



1.6 POTW Legal Authorities

The City of Phoenix has enacted an ordinance to implement a pretreatment program in the areas serviced by the 91st and 23rd Avenue Wastewater Treatment Plants. Lone Butte Water Reclamation Plant, which operates under contract with the Gila River Indian Community for wastewater reuse. Under this authority, the City issued City permit No.26 authorizing discharge of non-domestic wastewater to the sewers.

1.7 Photo Documentation

Ten of the 11 photographs taken during this inspection are depicted below and saved as *arizonampp-01.jpg through -11.jpg*.



Photo #1: Metal Finishing Tanks
Taken By: Greg V. Arthur
Date: 08/12/09



Photo #2: 2° Containment Pit
Taken By: Greg V. Arthur
Date: 08/12/09

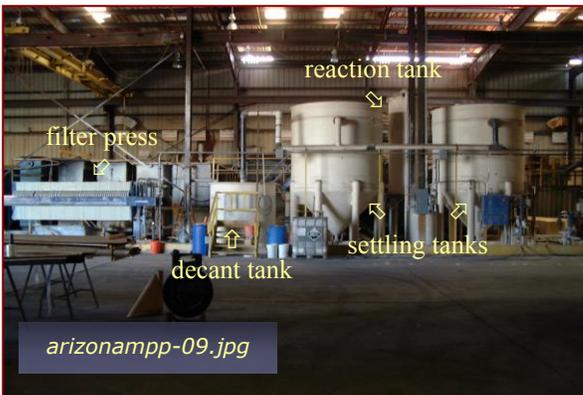


Photo #3: IWTP – reaction/settling/filterpress
Taken By: Greg V. Arthur
Date: 08/12/09



Photo #4: IWTP – reaction/settling/2°pit
Taken By: Greg V. Arthur
Date: 08/12/09

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Photo #5: IWTP Settling Tank and Reaction Tank
Taken By: Greg V. Arthur
Date: 08/12/09

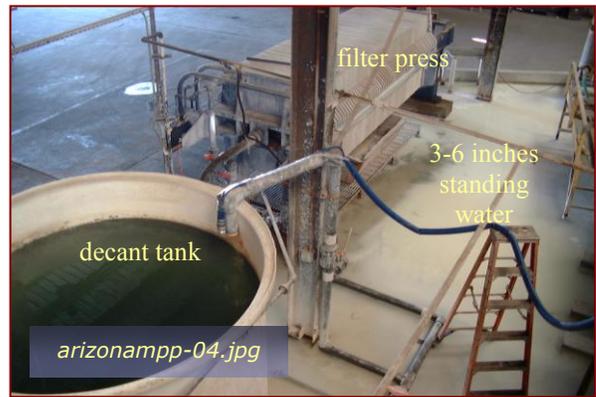


Photo #6: IWTP Decant Tank and Filter Press
Taken By: Greg V. Arthur
Date: 08/11/09



Photo #7: Standing Water within 2° Containment
Taken By: Greg V. Arthur
Date: 08/12/09

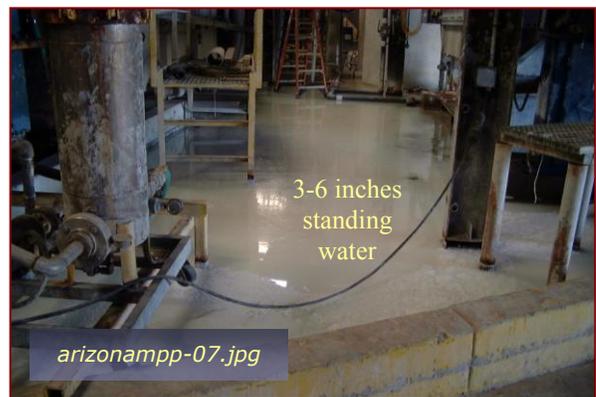


Photo #8: Standing Water within 2° Containment
Taken By: Greg V. Arthur
Date: 08/12/09



Photo #9: IWD-5335 Final Discharge Point
Photo Taken By: Greg V. Arthur
Date: 08/12/09



Photo #10: Outside Chemical Storage Area
Photo Taken By: Greg V. Arthur
Date: 08/12/09



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 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 finishers discharging over 10,000 gallons per day apply to all process wastewater discharges from Arizona MPP through IWD-5335. The Phoenix permit correctly advances standards reflecting the application of Federal standards adjusted to account for dilution. The permit also correctly advances local limits. The application of Federal standards, national prohibitions, and local limits was determined through visual inspection. See Appendix 3.

Requirements

- The Phoenix permit must apply the Federal four-day average standards.

Recommendations

- Arizona MPP should verify that since 1982, no new metal finishing lines have been installed, and no existing lines have been relocated.

2.1 Classification by Federal Point Source Category

Arizona MPP qualifies as a job-shop metal finisher subject to the Federal job-shop anodizing and chemical etching standards for existing sources in 40 CFR 413 Subparts D and F, as advanced by the Phoenix permit, as long as there have been no installation or relocations qualifying any portion of the facility as a new source.

New or Existing Sources – According to the Phoenix permit, Arizona MPP is likely subject to 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 that after the 1982 deadline, the new source standards apply to the original installation of metal finishing lines, rebuilt or moved lines, or existing lines converted to do new operations. In particular, the new source standards would apply when the installation of secondary containment involved the physical relocation and re-installation of entire lines. 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 the upgrading of treatment without altering production lines. 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*).

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 Phoenix local limits apply to non-domestic discharges in the 91st Avenue and 23rd Avenue Wastewater Treatment Plants service area.

2.3 Federal Categorical Pretreatment Standards

Existing Source Job-Shop Electroplating <10,000 gpd - 40 CFR 413 Subparts D and F

40 CFR 413 >10kgpd	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 Arizona MPP to the sewers through IWD-5335.

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. Otherwise, with single or rare events exceeding the 10,000 gpd discharge cap, the full list of standards apply. The Phoenix permit correctly applied the full list. The permit cites an average discharge of process-related wastewater of 130,000.

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-5335 do not need to be adjusted to account for multiple Federal categories, but do need adjustment for dilution



from RO reject, which accounts for 5% of the discharge through IWD-5335. The Federal standards in 40 CFR 413.03 also allow facilities with an approved solvent management plant to certify instead of sample for toxic organics.

Average Standards – The Federal standards in 40 CFR 413 apply four-day average standards to the sample results from four consecutive sampling (not calendar) days. The Federal rule at 40 CFR 413.04 allows a conversion to monthly-average standards only in order to calculate standards for combined discharges regulated under at least two Federal categories, thereby allowing the four-day standards in 40 CFR 413 to be statistically merged with monthly-average standards from other categories. Because only 40 CFR 413 applies, the Phoenix permit incorrectly converts the four-day average standards to monthly-averages.

Compliance Deadline - Existing source job-shop metal finishers were required to comply with the Federal job-shop electroplating 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 Phoenix sewer use ordinance establishes the prohibition against the dilution as a substitute for treatment (§28-8g), but not for the bypassing treatment necessary to comply. The ordinance does establish related provisions for protection from accidental discharges (§28-53).

2.5 Compliance Sampling and Point(s) of Compliance

The permit designates the final Parshall flume sample vault located in the southeast corner of the building as the final compliance sample point (designated in this report as IWD-5335).

Federal Standards - Federal categorical pretreatment standards apply end-of-process-after-treatment to all Federally-regulated discharges to the sewers. The sample point IWD-5335 is a suitable end-of-process-after-treatment sample point representative of the day-to-day discharge of Federally-regulated wastewaters from Arizona MPP.

Local Limits - Local limits and the national prohibitions apply end-of-pipe to non-domestic flows. The sample point IWD-5335 is a suitable end-of-pipe sample point representative of the day-to-day non-domestic wastewater discharges from Arizona MPP.

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 City of Phoenix permit specifies these sampling protocols by parameter (page 2 of 5). See Section 4.0 on page 12 and Appendix 3 on page 16.



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).

Arizona MPP employs wastewater treatment equivalent to the models used in originally setting the Federal standards for all of its wastewater discharges to the sewers. Redundant batch treatment also further improves reliability and performance, although the ponding of untreated wastewaters within secondary containment poses (1) a risk of pollutant loss to the ground water, and (2) compromised capacity of the secondary containment. Arizona MPP consistently complies with Federal standards. See Appendix 4 on page 17 of this report for a summary of the compliance sampling.

Requirements

- None.

Recommendations

- Secondary containment should be operated dry. Overflow rinses should be hard piped to the influent pit. Spents should be hard piped to surge tanks for metered feed into the pit.
- The filter press filtrate should not be returned to decant tank but rather into the influent pit or the reaction tank.
- The causes of the high suspended solids results over 1,000 mg/l should be identified.

3.1 Sampling Results

The two year July 2007-June 2009 sample record for Arizona MPP consists of self-monitoring and sampling collected by the City of Phoenix at frequencies that vary by parameter. All metals samples collected were 24-hour composites. All cyanide and toxic organic samples were lab composited grabs. See sections 3.2, 3.3 and 5.0 on pages 9, 10 and 14 of this report.

3.2 Best-Available-Technology Treatment

Arizona MPP is designed and operated with best-available-technology (“BAT”) model treatment for all of these discharges. As a result, the sampling results for IWD-5335



consistently comply with Federal standards, with average and calculated 99th% peak concentrations of 0.001 and 0.006 mg/l cadmium, 0.017 and 0.114 mg/l chromium, 0.025 and 0.128 mg/l copper, <0.020 mg/l lead, 0.006 and 0.025 mg/l nickel, 0.005 and 0.046 mg/l zinc, <0.10 mg/l total cyanide, and 0.019 and 0.050 mg/l total toxic organics. These sample results are all well below the Federal standards.

These sampling results indicate that the statistical probabilities of violating Federal standards are essentially 0% for any sampling day or for any four-day average of consecutive sampling days. In addition to treatment in-place, equivalent in design to the model treatment, there are operational controls which would be expected to further improve performance. The improvements (+) and deficiencies (-) are listed below.

- + Redundant batch settling tanks.
- + Recent reduction in daily flows make each 8,000 gallon settling tank nearly equivalent in volume to the daily discharge.
- + Processes limited to low-metals bearing sources (*anodizing, bright dipping, coloring*).
- Secondary containment is operated as an impoundment for untreated wastewaters.
- No influent equalization and uncontrolled delivery of wastewaters to the pit.
- No metering of high-strength spents.
- Decant tank is smaller than the settling tanks which effectively limits their capacity.
- Filter press filtrate returns to the decant tank for discharge to the sewers.

However, five of 57 sample results for total suspended solids were high enough to be indicative of violating conditions (03/05/08-1200 mg/l, 04/03/08-1400 mg/l, 04/04/08-1700 mg/l, 06/09/08-2400 mg/, 07/03/08-12000 mg/l). There were confirming samples for some but not all of these sampling days which did not indicate violations of specific limits. However, the high solids content on these sampling days does indicate the malfunctioning or bypassing of the treatment in-place.

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.

There is no evidence of "dilution as a substitute for treatment" since Arizona MPP does not meet both conditions of non-compliance. The first condition is not met since all Federally-regulated waters discharge through BAT model treatment. The second condition may be met if the overflow rinses discharge irrespective of whether there are parts in process.



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 any bypassing of treatment necessary to comply with Federal standards, since all rinses and spents drain to the pit for pumped discharge to the sewers through BAT treatment. In addition, as a result, there is no need for portable pumping and hosing for delivery, and thus there is a significant reduction in the potential for an inadvertent bypass of treatment.

3.5 Ponding Within Secondary Containment

Under RCRA, if the wastewaters impounded within secondary containment qualify as a D002 characteristic waste, then secondary containment rules in 40 CFR 265.193 apply. These regulations require (1) capture of all contents from the largest tank failures and (2) prevent any migration of hazardous waste into the underlying ground. As a result, secondary containment usually must be operated normally dry. In addition, the Phoenix ordinance (§28-7) prohibits the discharge of any industrial waste or polluted waters to any natural outlet within the City. See Photos #6, #7, and #8 in Section 1.7 on page 5 of this report.



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 Arizona MPP always complies with its local limits for metals, cyanide, organics, toxics, pH, and flow. The only potential violations involve the ponding of untreated wastewaters within secondary containment, which poses (1) a risk of pollutant loss to the ground water, and (2) compromised capacity of secondary containment. See Appendix 4 on page 17 of this report. Also see Sections 5.0 on page 14 of this report.

Requirements

- None.

Recommendations

- The final discharge should be self-monitored continuously 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 Lone Butte water reclamation 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 on average significantly less than domestic sewage. BODs over 100 mg/l and CODs over 400 mg/l are likely the result of the discharge of coloring solutions, however there is no evidence that these rare events resulted in any interference in the operations of the Phoenix sewer system and treatment plant.



Metals and Cyanide – There were no local limit violations for arsenic, beryllium, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, zinc, and total cyanide, primarily because the processes are limited to low-metals bearing sources.

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

Metals and Cyanide – There were no local limit violations for arsenic, beryllium, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, zinc, and total cyanide, primarily because the processes are limited to low-metals bearing sources.

Toxic Organics – There are no local limit violations for benzene or chloroform. There were also none for pesticides and PCBs since all measurements were below detection limits.

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 not expected. The discharges to the sewers are not high-strength in biodegradable organics. However, the self-reported pH readings varied much more than would be expected under well-controlled treatment. There were pH readings as high as 10.0 s.u. (08/11/07, 11/02/07, 05/22/08) and low as 6.0 s.u. (11/12/07). These readings, coupled with occasional samples with high suspended solids, are an indication of incomplete or bypassed treatment. The sources into treatment can be acidic and alkaline, and can include both low-strength rinses and high-strength spents. For these reasons, the final discharge through IWD-5335 needs to either (1) have continuous pH monitoring or (2) daily pH monitoring of batch discharges from a final equalization tank sized large enough to hold more than one day's worth of treated wastewater.

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 – Arizona MPP has successfully fulfilled the self-monitoring requirements set forth in the city permit. Over the past two years, the sample record shows that Arizona MPP (1) submitted sample results for all permit listed parameters at the frequencies listed 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.

Representativeness – The sample record for IWD-5335 appears to be representative of the discharge to the sewers over the sampling day and the six-month reporting period. In particular, the self-monitoring required by the permit is augmented with monthly sampling by the City of Phoenix. All of the pollutants were present at concentrations well below the Federal standards and local limits and thus they can be self-monitored at the Federal minimum level. However, self-monitoring at IWD-5335 for pH should be continuous given the variable and uncontrolled nature of the combined treated and untreated contributions into treatment.

Requirements

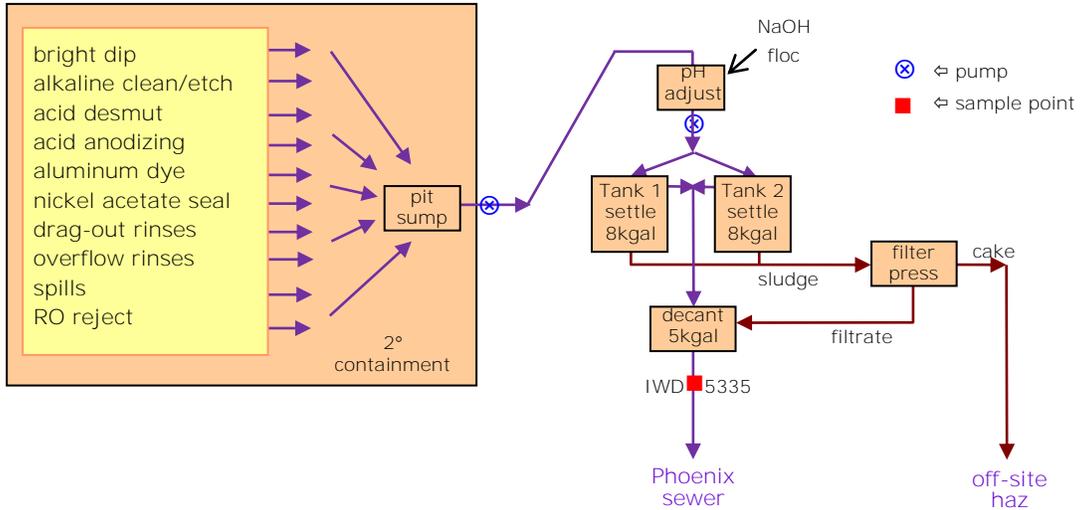
- See Appendix 3 on page 16 of this report for the self-monitoring and city monitoring requirements for that would be considered to be representative of the discharges.

Recommendations

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



Appendix 1
Arizona MPP - Configuration and Layout



Appendix 2
Arizona MPP - Tank Inventory, Tank Number, and Volume

gals	Tank Designations and Contents		gals	Tank Designations and Contents	
Bright Dip Line			Anodizing and Coloring Line		
7000	A-1 ✧	H ₃ PO ₄ /H ₂ SO ₄ bright dip	10000	B-1 ✧	alkaline cleaning
5000	A-2 ✧	1° dragout for A-1	10000	B-2 ✧	1° overflow rinse for B-1
700	A-3 ✧	1° dragout for A-1	10000	B-3 ✧	alkaline etching
10000	A-4 ✧	1° dragout for A-1	10000	B-4 ✧	1° overflow rinse for B-3
			10000	B-5 ✧	alkaline etching
			10000	B-6 ✧	1° overflow rinse for B-5
			10000	B-7 ✧	H ₂ SO ₄ /HNO ₃ desmut
			7000	B-8 ✧	1° overflow rinse for B-7
			10000	B-9 ✧	H ₂ SO ₄ Type II anodizing
			10000	B-10 ✧	1° overflow rinse for B-9
			10000	B-11 ✧	2° overflow rinse for B-9
			10000	B-12 ✧	acid dye
			10000	B-13 ✧	1° overflow rinse for B-12/14
			10000	B-14 ✧	gold dye
			10000	B-15 ✧	1° overflow rinse for B-12/14
			10000	B-16 ✧	1° overflow rinse for B-12/14
			10000	B-17 ✧	nickel acetate sealing
			10000	B-18 ✧	DI hot water sealing

The tank designations are by EPA for the purposes of this report.
✧ Discharge to the sewers through on-site industrial wastewater treatment.

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Appendix 3

Sewer Discharge Standards and Limits for Arizona MPP @ IWD-5335

Pollutants of concern (mg/l)	Fed standards ^⑤		nat'l pro (instant)	local lim (inst/dmax)	monitoring frequency ^①	
	(d-max)	(4d-avg) ^②			discharger	city
arsenic	-	-	-	0.13	1/six-mos	1/month
cadmium	1.14	0.70	-	0.047	1/six-mos	1/month
chromium	6.64	3.79	-	-	1/six-mos	1/month
copper	4.27	2.56	-	1.5	1/six-mos	1/month
lead	0.57	0.38	-	0.41	1/six-mos	1/month
mercury	-	-	-	0.0023	1/six-mos	1/month
molybdenum	-	-	-	-	1/six-mos	1/month
nickel	3.89	2.47	-	-	1/six-mos	1/month
selenium	-	-	-	0.10	1/six-mos	1/month
silver	-	-	-	1.2	1/six-mos	1/month
zinc	3.98	2.47	-	3.5	1/six-mos	1/month
total cyanide	1.80	0.95	-	2.0	1/six-mos	1/six-mos
total toxic organics	2.02	-	-	-	1/six-mos ^④	1/six-mos
total metals	9.96	6.45	-	-	1/six-mos	1/month
benzene	-	-	-	0.035	-	1/six-mos
chloroform	-	-	-	2.0	-	1/six-mos
pesticides and PCBs	-	-	-	⑦	-	1/six-mos
BOD	-	-	-	-	2/month	1/two-mos
TSS	-	-	-	-	1/quarter	1/two-mos
flow (gpd)	-	-	-	180,000	daily	-
pH (s.u.)	-	-	<5.0	5.0-10.5	continuous	1/month
explosivity	-	-	<140°F ^⑥	<10% LEL	-	-

① Recommended **reductions in green**. Recommended **increases in red**.

② 4-day average standards based on sample results from four consecutive sampling days.

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

④ 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.

⑤ Federal standards adjusted downward by 5% to account for dilution from RO reject.

⑥ Closed-cup flashpoint

⑦ City ordinance prohibits the introduction of these pollutants at any amount.



Appendix 4
Wastewater Discharge Quality for Arizona MPP @ IWD-5335

Sample Record Summary – July 2007 – June 2009								
pollutants (µg/l)	effluent sampling results				violation rate ① ②			sample count
	mean	99th%	min	max	d-max	4d-avgs	instant	
arsenic	<5	<5	<5	<50	-	-	0/20	20
beryllium	<4	<4	<1	<4	-	-	0/16	16
cadmium	0.7	5.8	<2	11.0	0/24	0/6	0/24	24
chromium	17.4	114.1	<5	240.	0/39	0/9¾	0/39	39
copper	25.3	128.3	<5	170.	0/42	0/10½	0/46	46
lead	<20	<80	<10	<80	0/24	0/6	0/24	24
mercury	<0.2	<0.2	<0.2	<0.2	-	-	0/20	20
molybdenum	29.6	64.4	7	52	-	-	0/19	19
nickel	6.4	24.8	<10	28	0/24	0/6	0/24	24
selenium	1.6	<50	<1	<50	-	-	0/19	19
silver	<5	<20	<5	<20	-	-	0/20	20
zinc	5.3	46.2	<50	110	0/39	0/9¾	0/39	39
total cyanide	<10	<20	<5	<20	0/7	0/1¾	0/7	7
total toxic organics	19.0	49.9	9.4	38.2	0/4	-	0/4	4
pesticides and PCBs	<DL	<DL	<DL	<DL	-	-	0/4	4
total metals	77.0	171.7	<80	400	0/39	0/9¾	-	39
BOD (mg/l)	34.7	99.3	<5	100	-	-	-	57
COD (mg/l)	118.4	290.6	6.1	400	-	-	-	57
TDS (mg/l)	9490	21809	8340	15100	-	-	-	4
TSS (mg/l)	77.3	4183.7	<10	12000	-	-	-	57
fluoride (mg/l)	2.6	13.0	<0.2	18.0	-	-	-	15
flow (gpd)	19525	51076	5759	49667	-	-	0/16	16
pH (s.u.)	5.8 min – 8.6 median - 10.0 max				-	-	0/242	242

Federal Standard Violations – July 2007 to June 2009					
sample dates	type	sampler	Fed standards / local limits ①	violations	days
			all parameters	None	0
Local Limit Violations – July 2007 to June 2009					
			all parameters	None	0
total days of violation					0

Statistical Violation Probabilities				
violation probability ①	mean (µg/l)	std dev (µg/l)	statistical probability	percent
all parameters	µ = *	σ = *	α(*) = 0.0000	~0%

① 4-day avgs from consecutive sampling days of all samples (both self-monitoring and Phoenix)
② Fed stds for metals compared only to 24-hr composite samples. Local limits to all samples.

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