



# **Pretreatment Program Implementation Plan**

August 2013

<b>1. Introduction</b>	<b>1</b>
<b>2. Regulatory Background</b>	<b>1</b>
<b>3. Implementation Schedule</b>	<b>4</b>
3.1 Phase I	5
3.2 Phase II	6
3.3 Phase III	7
3.4 On-Going Activities	7
3.5 Recurring Activities	8
<b>4. Permitting Significant Industrial Users</b>	<b>8</b>
4.1 Determining Required Permittees	9
4.2 Permit Contents	10
4.3 Permit Modifications	13
<b>5. IWDP Permitting Procedures</b>	<b>14</b>
5.1 IWDP Application Review	14
5.2 Pre-Permit Inspection	15
5.3 Wastewater Characterization	16
5.3.1 Sampling Location	16
5.3.2 Analytical Parameters	16
5.3.3 Sampling Technique	17
5.4 Research and Permit Writing	17
5.5 Combined Wastewater Stream Formula	18
<b>6. References</b>	<b>20</b>

**Tables**

- 1 Key Components in the National Pretreatment Program
- 2 Pretreatment Program Timeline
- 3 Definition of SIUs (40 CFR 403.3(v))
- 4 Permitting Timelines
- 5 Definition of Authorized Representative of Industrial User (City Code, Title II, Chapter 2-1-9)
- 6 Sampling and Container Requirements

**Figures**

- 1 Regulatory Framework
- 2 Wastewater Streams for CWA and FWA
- 3 Combined Wastewater Formula

**Appendices**

- A Examples of IWDP Application and Permit

**Acronyms and Abbreviations**

AAC	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
APP	Aquifer Protection Permit
AZPDES	Arizona Pollutant Discharge Elimination System
BMPs	Best Management Practices
BOD <sub>5</sub>	5-Day Biochemical Oxygen Demand
CFR	Code of Federal Regulations
CWA	Clean Water Act
CWF	Combined Wastewater Stream Formula
DHS	Department of Health Services
ERP	Enforcement Response Plan
FOG	Fats, Oils and Grease
FSF	Food Service Facility
FWA	Flow-Weighted Average
gpd	gallons per day
Hg	mercury
IWDP	Industrial Wastewater Discharge Permit
IWS	Industrial Waste Survey
mgd	million gallons per day
NAICS	North American Industry Classification System
NPDES	National Pollutant Discharge Elimination System
NSCIU	Non-Significant Categorical Industrial User
POTW	Publicly Owned Treatment Works
PPE	Personal Protective Equipment
QC	Quality Control
SIC	Standard Industrial Classification
SIUs	Significant Industrial Users
SSOs	Sanitary Sewer Overflows
TKN	Total Kjeldahl Nitrogen
TSS	Total Suspended Solids
USEPA	U.S. Environmental Protection Agency
VSF	Vehicle Service Facility

## 1. Introduction

The City of Prescott (City) has developed a Pretreatment Program to protect its Publicly Owned Treatment Works (POTWs) by controlling wastewater discharges of pollutants from Industrial and Commercial Users. This Implementation Plan is a working document that contains procedures and resource information for carrying out elements of the Pretreatment Program.

The objectives of the City's Pretreatment Program are to:

- Control pollutant discharges into the sewer collection system
- Reduce collection system blockages and sewer overflows
- Protect the POTWs and the environment
- Maintain high quality effluent and biosolids
- Protect the public and City workers
- Maintain compliance with regulatory requirements, such as the Aquifer Protection Permit (APP) effluent limits

## 2. Regulatory Background

In 1972, Congress passed the Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), to restore and maintain integrity of the nation's waters. One of the key components of the CWA is the development of the National Pollutant Discharge Elimination System (NPDES) permit program. The NPDES permit program requires point source dischargers of pollutants to the waters of the U.S. (direct dischargers) to obtain a specific discharge permit (Figure 1).

In addition to addressing these direct discharges, the CWA also established a regulatory program to address indirect discharges from industries to POTWs through the National Pretreatment Program (40 CFR 403), a component of the NPDES permit program. The National Pretreatment Program (Table 1) requires nondomestic dischargers to comply with pretreatment standards and its objectives are to:

- Prevent introduction to POTW of pollutants which will interfere with operation of the POTW, including interference with its use or disposal of sludge
- Prevent introduction to POTW of pollutants which will pass through the treatment works or otherwise be incompatible with such works
- Improve opportunities to recycle and reclaim municipal and industrial wastewater and sludge

Three types of discharge standards are described under the National Pretreatment Program:

- Prohibited Discharge Standards (40 CFR 403.5)
- Categorical Pretreatment Standards (40 CFR 403.6, 405 – 471)
- Local Limits (40 CFR 403.8(f)(4))

The National Pretreatment Program requires all large POTWs (those designed to treat flows of greater than 5 million gallons per day, mgd) and smaller POTWs (those accepting wastewater from Industrial Users that could affect the treatment plant or its discharge) to establish local pretreatment programs. These local programs must enforce all national pretreatment standards and requirements, in addition to any more stringent local requirements necessary to protect site-specific conditions to the POTW.

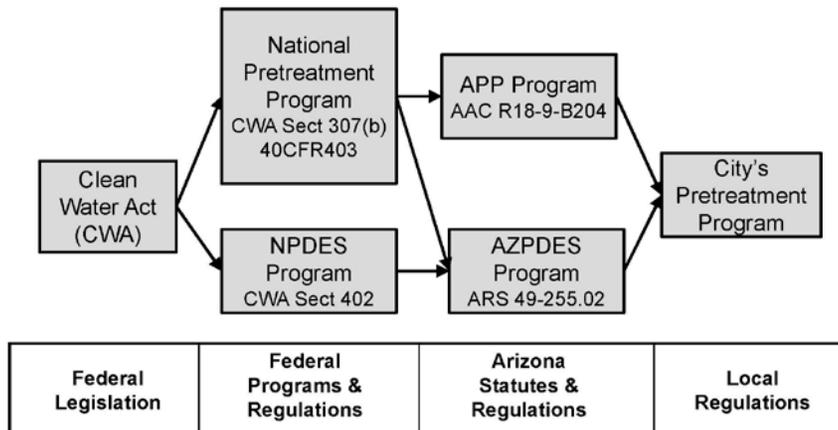
On December 5, 2002, the USEPA authorized the Arizona Department of Environmental Quality (ADEQ) to implement the Arizona Pollutant Discharge Elimination System (AZPDES), the state equivalent of the NPDES program. The AZPDES program is described in the Arizona Administrative Code (AAC), Title 18, Chapter 9 (R18-9). While the primary focus of the AZPDES program is regulating direct dischargers, R18-9-A905(A)(8)(b) also incorporates the general pretreatment regulations for existing and new sources of pollution contained in 40 CFR 403 and Appendices A, D, E, and G, which applies to POTWs receiving wastewater from sources subject to the National Pretreatment Standards.

The City's Pretreatment Program is incorporated in City Code, Title II, Chapter 2-1 (referred to as the Sewer Use Ordinance), which establishes the City's legal authority to administer and enforcement the Pretreatment Program. The City's Pretreatment Program includes the following components:

- Updated Sewer Use Ordinance
- Industrial Waste Survey (IWS)
- Local Limits Update
- Enforcement Response Plan (ERP)
- Industrial User permitting procedures
- Wastewater sampling and site inspection procedures

This Implementation Plan focuses on developing industrial wastewater permits for Significant Industrial Users (SIUs), including performing site inspections and collecting baseline wastewater samples in support of permit development.

**Figure 1  
Regulatory Framework**



**Table 1  
Key Components in the National Pretreatment Program**

<b>40 CFR</b>	<b>Section Title</b>
403.1	Purpose and applicability
403.2	Objectives
403.2	Definitions
403.4	State or local law
403.5	National pretreatment standard: Prohibited discharges
403.6	National pretreatment standard: Categorical standards
403.7	Removal credits
403.8	Pretreatment program requirements: Development and implementation by POTW
403.9	POTW treatment programs and/or authorization to revise pretreatment standards: Submission for approval
403.10	Development and submission of NPDES state pretreatment programs
403.11	Approval procedures for POTW pretreatment programs and POTW granting of removal credits
403.12	Reporting requirements for POTW's and industrial users
403.13	Variations from categorical pretreatment standards for fundamentally different factors
403.14	Confidentiality
403.15	Net/Gross Calculation
403.16	Upset provision
403.17	Bypass
403.18	Modification of POTW pretreatment programs
Appendix D	Selected Industrial Subcategories Considered Dilute for Purposes of the Combined Waste Stream Formula
Appendix E	Sampling Procedures
Appendix G	Pollutants Eligible for Removal Credit

### 3. Implementation Schedule

The development of the Pretreatment Program has involved updating the Sewer Use Ordinance (City Code, Title II, Chapter 2-1), setting up a web-based IWS, modifying the local limits report, revising the ERP, and developing a Pretreatment Program Deliverable for ADEQ review. Once ADEQ has approved the Pretreatment Program, the City can begin to develop Industrial Wastewater Discharge Permits (IWDP) for SIUs. Table 2 presents the proposed phased approach, which will allow the City staff to slowly develop the program in addition to their current responsibilities.

<b>Table 2 Pretreatment Program Timeline</b>	
<b>Approximate Start Dates</b>	<b>Pretreatment Program Task</b>
<b>Phase I</b>	
June 2013	Updated Sewer Use Ordinance, Enforcement Response Plan, and Local Limits adopted by City Council
July 2013	Final Pretreatment Program Deliverable submitted to ADEQ Document will be modified to reflect any substantial changes to the program
July 2013	Permitting Identified SIUs Industries suspected of being SIUs will be required to complete IWDP application; City will work with industry to develop permit requirements
>Sept 2013	Baseline Site Inspection Performed as part of the permitting process
>Sept 2013	Baseline Monitoring SIUs may be required to conduct initial wastewater sampling as part of the permitting process
<b>Phase II</b>	
Sept 2013	Compliance Monitoring Pure Wafer currently conducts quarterly sampling of discharged wastewater; After SIUs are permitted compliance monitoring frequency will be specified in IWDP
>Sept 2013	SIU Reporting Reporting requirements and frequency will be specified in the IWDP
>Jan 2014	Site Inspections After SIUs have been permitted, site inspection will be conducted on annual basis

<b>Table 2 Pretreatment Program Timeline (cont.)</b>	
<b>Approximate Start Dates</b>	<b>Pretreatment Program Task</b>
<b>Phase III</b>	
>Mar 2014	Develop FOG Program Based on information from IWS and frequency of SSOs and sewer blockages/clean-outs due to FOG; Focus will be on BMP implementation and education
>Jan2015	Assess Need for General Permits Dependent on the success of FOG Program; General Permits will be evaluated for particular commercial user categories (i.e., food service facilities (FSFs), vehicle service facilities (VSFs), etc)
<b>On-Going Tasks</b>	
Jan 2013	On-line Industrial Waste Survey (IWS) Businesses requesting building permits will be required to complete IWS prior to obtaining permit
Feb 2013	Public Education & Outreach Includes stakeholder meetings with SIUs, City Council, and public to discuss Pretreatment Program; City will continue education/outreach during inspections, through BMP literature, and responding to questions
>Jan 2014	Permitting SIUs Identified Through the IWS Will occur after known SIUs have been permitted and new industries complete IWS
<b>Recurring Activities</b>	
Annually	ADEQ Annual Pretreatment Report
Every 5 yrs	Local Limits Evaluation

### 3.1 Phase I

Phase I includes the Pretreatment Program development and implementation of the permitting identified SIUs (e.g., Pure Wafer, Sturm Ruger, Ester C, Sun Fashion Design, Offsite LLC, and Fortner Aerospace). After submitting the final Pretreatment Program Submittal to ADEQ, ADEQ will initiate a 30-day public notice process. The City will have the opportunity to respond to any comments received by ADEQ during the public notice period.

The first step in the permitting process will involve the SIUs completing the IWDP application form. An example template for the IWDP application is included in Appendix A. In order to complete the permit application, the SIU will have to compile information from various sources. Some of the information requested on the IWDP application may not be known, especially questions involving wastewater

characteristics if the SIU has not previously collected wastewater samples. Developing the IWDP permits may involve significant amount of staff time coordinating with SIUs, researching pretreatment requirements for categorical dischargers, and reviewing how other cities are permitting similar industries.

Additional information describing the permitting process is included in Section 5. A pre-permit/baseline site inspection will be performed during the initial SIU permitting. The site inspection will be used to verify information submitted on the IWDP application and provide additional understanding of SIU operations and pretreatment procedures. Some SIUs may also choose to conduct baseline wastewater sampling of their discharge in order to obtain better understanding of wastewater characteristics.

It is anticipated that the City will focus on developing IWDP permits for one to two SIUs at a time due to the time commitment. The amount of time required to develop the IWDP will depend on the complexity of the SIU's operations and pretreatment processes.

### **3.2 Phase II**

After the discharge permits have been developed, Phase II will involve compliance inspection/monitoring and reporting by the SIUs, as required by the IWDPs. Some SIUs (e.g., Pure Wafer) may already be performing wastewater monitoring due to Categorical Pretreatment Standard requirements. Sampling requirements will be listed in the IWDP and the sampling frequency may range from monthly to annual sampling. The sampling frequency will depend on the volume of wastewater discharged, the wastewater characteristics, and the potential to impact the POTW. For SIUs that are not familiar with the requirements of collecting representative wastewater samples, the City will act as a resource for information and possibly training.

The wastewater monitoring results will be summarized in reports by the SIU and submitted to the City within timeframes specified in City Code, Title II, Chapter 2-1-67. As SIUs are permitted, the organizational requirements of managing SIU compliance reports and data will increase.

After an SIU has been permitted, the City will conduct site inspections at least on an annual basis. Additional site inspections may be performed based on past performance and compliance by the SIU, wastewater flow and characteristics, and if there are any issues at the POTWs which are the result of the SIU's discharge.

### **3.3 Phase III**

Phase 3 will focus on commercial users, such as Food Service Facilities (FSFs) or Vehicle Service Facilities (VSFs), which may be discharging Fats, Oils, and Grease (FOG). A FOG program will be developed which will focus on public education and outreach to promote the use of Best Management Practices (BMPs), and pretreatment equipment, such as grease interceptors. The City will develop BMP materials specific to commercial user categories (e.g., FSFs, VSFs) that can be mailed out to businesses or handed out during site visits. Based on information obtained from the IWS, feedback from FOG education/public outreach, and the frequency of Sanitary Sewer Overflows (SSOs) or FOG blockages in the collection system, the City may decide to pursue implementing general permits for commercial dischargers. Implementation of General Permits will require an update of the Sewer Use Ordinance and City Council approval.

### **3.4 On-Going Activities**

There are several pretreatment activities which are scheduled to continue throughout the program implementation, including the IWS, public education/outreach, and permitting additional SIUs. The IWS survey was launched January 2013. Postcards were sent to industries and businesses explaining the purpose of the on-line survey and directing dischargers to the City's Water Protection web site to the survey link. The survey was intended to remain open and active through March 31, 2013; however, user response was lower than anticipated (the survey was completed by approximately 47 businesses).

By continuing to run the on-line survey, the City can use the IWS as a tracking tool for new businesses connecting to the sewer collection system and potential SIUs. The Public Works Department is coordinating with the Building Department to identify businesses requesting building permits, and then requiring the business to complete on-line survey prior to obtaining the building permit. This will also provide an opportunity to ensure that businesses understand the requirements and proper maintenance/operation for appropriate pretreatment devices (e.g., interceptors). The City could also use the IWS for obtaining information on commercial users that could potentially pose problems to the POTWs. The IWS becomes a repository of commercial and industrial discharger information. As the IWS identifies potential SIUs, the permitting process will also continue.

Public education and outreach will first focus on the SIUs during their initial permitting process. As new businesses are required to complete the IWS, the outreach will shift

to industrial and commercial users. As the City is notified of sanitary sewer overflows (SSOs) or odor complaints, education and outreach will be targeted towards dischargers experiencing problems. Development of the FOG Program will focus primarily on generating brochures describing BMPs and educating users.

**3.5 Recurring Activities**

The City will be required to submit an annual pretreatment report to ADEQ, which summarizes the Pretreatment Program. The annual report, as required by 40 CRF 403.12(i), will include a list of the POTW’s industrial users, identifying permitted SIUs and categorical dischargers; status of industrial user compliance over reporting period; summary of compliance and enforcement activities during reporting period; analytical results summary of influent and effluent at each treatment plant; summary of changes to the POTW’s pretreatment program; and any other relevant information requested by ADEQ.

Local limits should be re-evaluated every five years or sooner if there are significant changes in the industrial users discharging to the POTWs or if the POTWs experiences frequent effluent limit violations. As new businesses and industries move in and water usage rates change, local limits studies can be used to evaluate changes in the influent to the POTWs.

**4. Permitting Significant Industrial Users**

40 CFR 403 requires the City to control wastewater discharges from SIUs through permits, or similar means, to ensure compliance with pretreatment standards. The regulations also specify that individual control mechanisms (i.e., permits) be issued to the SIUs, as defined in Table 3, and be enforceable by the City.

<b>Table 3 Definition of SIUs (40 CFR 403.3(v))</b>
<p>Industrial User that:</p> <ul style="list-style-type: none"> <li>• Is subject to federal categorical pretreatment standards</li> <li>• discharges an average of 25,000 gallons per day (gpd) or more of process wastewater to POTW</li> <li>• contributes a process waste stream making up 5 percent or more of the average dry-weather hydraulic or organic capacity of the POTW</li> <li>• designated by the POTW as such because of its reasonable potential to adversely affect the POTW’s operation or violate any pretreatment standard or requirement</li> </ul>

The City’s legal authority to issue industrial wastewater discharge permits is based on City Code. Title II, Chapter 2-1-65. The SIU is responsible for obtaining an IWDP from the City’s Public Works Director prior to discharging any wastewater to the City’s POTWs. Table 4 presents some key dates for the permitting timeline.

<b>Table 4 Permitting Timelines</b>	
<b>Permit Application</b>	
New Connections	File 45 days before discharging
Existing Connections	File 45 days after June 27, 2013 (Ordinance adoption); 30 days after August 11, 2013 do not continue to discharge unless have obtained permit or have been granted extension from Public Works Director
<b>Permit Issuance/Transfer</b>	
Notice	Within 60 days after receiving completed permit application, Public Works Director will send written notice to Industrial User regarding decision to issue permit
Reconsider Permit Terms	Within 20 days after publication of notice of final permit issuance, anyone can petition Public Works Director to reconsider terms and conditions of permit
Expiring Permit	Submit completed application 45 days prior to permit expiration date
Transferring Permit	Notify Public Works Director at least 60 days in advance of transfer to new owner/operator

Any violation of the IWDP will be considered a violation of City Code, Title II, Chapter 2-1 and will be subject to enforcement actions. Obtaining an IWDP does not relieve the Industrial User of its obligation to comply with all Federal, State, and local pretreatment standards.

**4.1 Determining Required Permittees**

Classifying an Industrial User as an SIU is fairly straightforward, based on the definition in 40 CRF 4033(v); however, there is some discretion concerning which Industrial Users require IWDPs. Industrial Users classified as SIUs are required to obtain IWDPs in order to discharge wastewater to the sewer collection system, with the following exceptions. The Public Works Director may defer permit requirements for an Industrial User, subject to categorical pretreatment standards, but considered a Non-Significant Categorical Industrial User (NSCIU), rather than an SIU, if the Industrial User meets the following three conditions:

- Never discharges more than 100 gpd of total categorical wastewater
- Has consistently complied with the categorical pretreatment standards

- Never discharges untreated process wastewater

For an Industrial User that meets the SIU criteria but has no reasonable potential for adversely affecting treatment facility operations, the Public Works Director may determine that the Industrial User does not require an IWDP. The Public Works Director may also require an Industrial User to obtain an IWDP even if discharge of wastewater is not anticipated (e.g., zero dischargers).

#### **4.2 Permit Contents**

An IWDP will include such conditions as are deemed reasonably necessary by the Public Works Director to prevent pass-through or interference, protect the quality of the treatment facilities' effluent, facilitate sludge management and disposal, protect against damage to the collection system and treatment facilities, prevent sanitary sewer overflows, and protect worker health and safety. An example IWDP permit template is included in Appendix A. Information contained in the permit may include the following:

- General facility information, including name, address, and contact information for the owner/operator
- Number of employees and hours of operations
- Standard Industrial Classification (SIC) or North American Industry Classification System (NAICS) code
- Description of the operations, including nature, average production rate, and schematic process diagram
- Description of the contributing wastewater streams that comprise each identified non-domestic discharge into the sewers
- List of raw materials and chemicals used or stored at facility
- Site map indicating the locations of all compliance sampling points, sewer connections, sewer laterals, and floor drains
- Pretreatment processes and equipment
- Time, volume, and duration of discharges (e.g., batch or continuous)

- Wastewater discharge limits based on applicable pretreatment standards and/or requirements for BMPs
- Rationale for the wastewater discharge limits
- Flow measurement procedures and limits on average and/or maximum discharge flow rates
- Applicable federal categorical pretreatment standards (adjusted if necessary to account for dilution), supporting production data (if necessary), and the compliance sampling point where the standards apply
- Self-monitoring requirements, sampling, and reporting limits, including a list of pollutants to be monitored, sampling location(s), sampling frequency, and sample type (e.g., composite or grab)
- Reporting, notification, and recordkeeping requirements
- Permit expiration date (not to exceed five years in duration)
- A statement that the permit is non-transferable without prior notification to and approval by the Public Works Director
- A statement of applicable civil and criminal penalties for violation of pretreatment requirements or compliance schedule
- Requirements for the installation of pretreatment technology, pollution control, or construction of appropriate containment devices, designed to reduce, eliminate, or prevent the introduction of pollutants into the POTW
- Requirements for development and implementation of spill control plans and other special conditions, including management practices necessary to adequately prevent accidental, unanticipated, or non-routine discharges
- Development and implementation of waste minimization plans, including but not limited to BMPs, to reduce the amount of pollutants discharged to the collection system and treatment facilities
- Requirements for installation and maintenance of inspection and sampling facilities and equipment, including flow measurement devices

- A statement that compliance with the permit does not relieve the permitted discharger of responsibility for compliance with all applicable federal and Arizona pretreatment standards, including those which become effective during the term of the permit
- Other special conditions as deemed appropriate by the Public Works Director to ensure compliance with the City Code, and Federal and State laws, rules, and regulations

The IWDP application will be signed by an authorized representative, defined in Table 5, of the Industrial User, per City Code, Title II, Chapter 2-1-9, and contain the following certification statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

<b>Table 5 Definition of Authorized Representative of Industrial User (City Code, Title II, Chapter 2-1-9)</b>
<p>Authorized Representative is:</p> <ul style="list-style-type: none"> <li>• If Industrial User is corporation:               <ul style="list-style-type: none"> <li>a) President, secretary, treasurer, or vice-president of corporation in charge of principal business function, or other person who performs similar policy/decision-making functions</li> <li>b) Manager of manufacturing, production, or operating facilities that is authorized to make management decisions that govern facility operation, including recommendations for major capital investment and long-term environmental compliance; can ensure complete/accurate information for IWDP requirements; and has authority to sign documents</li> </ul> </li> <li>• If Industrial User is a partnership or sole proprietor: a general partner or proprietor</li> <li>• If Industrial User is a Federal, State, or local governmental facility: a director or highest official appointed/designated to oversee operation of the governmental facility, or their designee</li> <li>• Individuals described above may designate another authorized representative if the authorization is in writing, the authorization specifies the individual responsible for overall facility operations or environmental matters, and the authorization is submitted to the City</li> </ul>

### **4.3 Permit Modifications**

The Public Works Director may modify the IWDP for a variety of reasons, including:

- Incorporate new or revised Federal, State, or local pretreatment standards
- Address significant alterations or additions to the industrial user's operation, processes, or wastewater volume or characteristic
- Change in the POTW that requires either a temporary or permanent reduction or elimination of permitted discharges
- Information indicating that permitted discharge poses a threat the City's POTW, personnel, or effluent
- A violation of any terms or conditions of the IWDP occurs
- Misrepresentations or failure to fully disclose all relevant facts in the IWDP application or in any required reporting
- Revision of or a grant of variance from categorical pretreatment standards pursuant to 40 CFR 403.13
- Correct typographical or other errors in the IWDP
- Reflect transfer of the facility ownership or operation to a new owner or operator

The Public Works Director may also revoke an IWDP for the following reasons:

- Failure to notify the Public Works Director of significant changes in volume or wastewater characteristics prior to discharge
- Failure to provide prior notification to the Public Works Director of changed conditions
- Misrepresentation of information or failure to fully disclose all relevant facts in the IWDP application

- Falsification of any documents, including self-monitoring reports and certification statements
- Tampering with monitoring equipment with intent to falsify monitoring results or impact the outcome of sampling
- Refusing to allow City staff timely access to the facility premises and records
- Failure to meet wastewater discharge limits
- Failure to pay fees or fines in a timely manner (i.e., after 30 calendar days)
- Failure to meet compliance schedules
- Failure to complete the IWS or the IWDP application
- Failure to provide advance notice of transfer of business ownership or operation of a permitted facility and request a transfer of IWDP
- Violation of any pretreatment standards or any terms of the IWDP

The IWDP is voidable upon stopping operations or transfer of business ownership. When a new IWDP is issued to an Industrial User, the previous IWDP is considered voided.

## **5. IWDP Permitting Procedures**

The following sections describe activities for developing a new IWDP. The level of effort will vary depending on the complexity of the Industrial User's facility and if historical wastewater characterization and flow data are available.

### **5.1 IWDP Application Review**

Completing the IWDP application will require the Industrial User to pull together information from a variety of sources. Communication between the Industrial User and the City during the application process may clarify some information requirements. The following items will be addressed during the application review process:

- Is application complete?

- Is there sufficient information to gain understanding of operations/process flow?
- Based on SIC code, is industry a categorical discharger (40 CFR 405 – 471)? If so, are there associated categorical pretreatment standards or required BMPs?
- Is there sufficient historical data to be able to characterize wastewater? (ideally, 1 to 2 days of sampling for priority pollutants and 7 to 14 sampling days of sampling for pollutants that have local limits, categorical pretreatment standards, or are chemicals used/stored onsite)
- Does wastewater characterization data compare with chemicals listed as being stored/used onsite?
- Does the compliance sampling location represent all non-domestic wastewater discharged to collection system?

## **5.2 Pre-Permit Inspection**

After reviewing the IWDP application, a site inspection can provide additional understanding on operations and process flow, verify that the application information is correct, and identify any other issues that will need to be included in the IWDP permit. The following items should be reviewed or evaluated during the site inspection:

- Is information (especially operations, chemicals stored onsite, and pretreatment equipment) presented in the IWDP application accurate and match current onsite conditions?
- Have all process streams been identified in the IWDP application?
- Are any of the process streams from categorical operations? And if so, are the process streams blended with non-categorical wastewater before or after pretreatment?
- How is wastewater discharge flow measured?
- How are wastewater samples collected? And is sampling location representative of wastewater discharged to sewer collection system?
- Are any parameters analyzed in-house? If so, are documentation, calibration, and analytical procedures appropriate?
- Are BMPs being performed? And are there opportunities to employ other BMPs?
- Is pretreatment being performed on wastewater? If so, does equipment match descriptions in IWDP application? And are operating and maintenance procedures available? Does staff appear to be trained on use of any pretreatment equipment?

- Are chemicals stored appropriately? Do chemicals observed onsite match those listed in IWDP application?
- Are general housekeeping and documentation practices in order?

The pre-permit site inspection can also provide a forum to discuss water balance (calculated from the IWDP application information) with the Industrial User to assess if all waste streams have been accounted.

### **5.3 Wastewater Characterization**

To assess which pollutants should be included in the IWDP, the City will need to understand the wastewater characteristics. If previous wastewater sampling has not been performed, wastewater characteristics can be estimated by evaluating chemicals stored and used onsite and the process operations. However, the best way to characterize the discharged wastewater is to collect samples. For SIUs that have minimal sampling experience the following sections describe items that should be reviewed prior to baseline or compliance monitoring.

#### **5.3.1 Sampling Location**

The sample monitoring point should be in a location which is easily accessible and is representative of all wastewater streams that are discharged. Flow monitoring will be required in conjunction with wastewater sampling, so the sample location should be in an area conducive to measuring flow (e.g., near weir or inline flow meter). The location should also be able to accommodate an autosampler.

#### **5.3.2 Analytical Parameters**

The analytical parameters included in the permit will be based on categorical pretreatment standard requirements, known chemicals stored/used onsite, or pollutants suspected to be present in the wastewater. For baseline sampling, the SIU should include analytes having local limits (arsenic, cadmium, chromium, copper, cyanide, fluoride, lead, mercury, nickel, silver, and zinc) and parameters identified for continued monitoring in the Local Limits Update [ammonia, total Kjeldahl nitrogen (TKN), biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS)]. If an analyte is not present in the wastewater (as demonstrated through sampling) and is not required as a categorical pretreatment standard, it may be appropriate to exclude the parameter from the IWDP monitoring requirements. The IWDP may include sampling parameters for monitoring purposes only and not associated with a discharge limit.

### 5.3.3 Sampling Technique

The majority of the analytical parameters will require flow-proportional 24-hour composite samples collected using an automatic sampler (e.g., ISCO sampler). SIUs will be able to rent the required sampling equipment but may require assistance in programming the autosamplers, collecting the samples, and completing the associated sampling paperwork (i.e., chain-of-custody). The quality of the wastewater data is directly related to the sample collection technique, so it is critical that the City work with the SIU to ensure that samples are collected using the appropriate techniques. This would also include decontamination procedures, collection of field quality control (QC) samples (if required), personal protective equipment (PPE) requirements, and interacting with analytical laboratories. Table 6 presents the sampling and container requirements for several analytical parameters.

<b>Parameter</b>	<b>Sample Type</b>	<b>Analytical Method</b>	<b>Container</b>	<b>Container/ Preservation</b>	<b>Holding Time</b>
Metals	24 hr flow composite	6020/ 7470 (Hg)	500 ml poly	4+/-2°C and HNO <sub>3</sub> to pH<2	6 month (28 days for Hg)
Cyanide	Field composited grabs	SM4500-CN	500 ml poly	4+/-2°C and NaOH to pH>12	14 days
Fluoride	24 hr flow composite	340.2	500 ml poly	4+/-2°C	28 days
Ammonia	24 hr flow composite	350.1	500 ml poly	4+/-2°C and HNO <sub>3</sub> to pH<2	28 days
TKN	24 hr flow composite	351.4	500 ml poly	4+/-2°C and HNO <sub>3</sub> to pH<2	28 days
BOD <sub>5</sub>	24 hr flow composite	405.1	1 L poly	4+/-2°C	48 hours
TSS	24 hr flow composite	160.2	500 ml poly	4+/-2°C	7 days

### 5.4 Research and Permit Writing

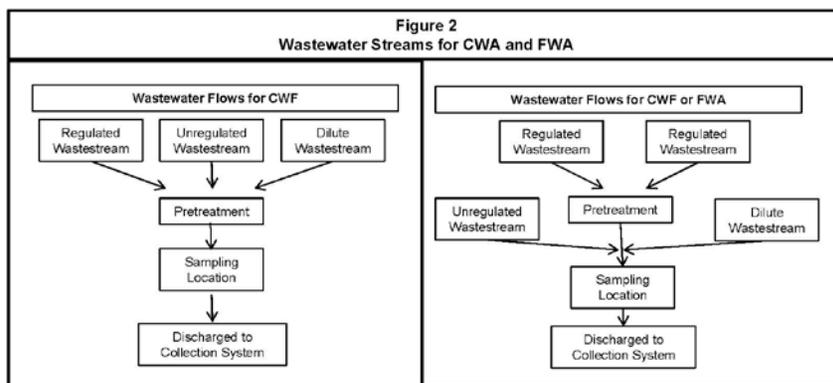
The IWDP application and the site inspection will provide site-specific information for that particular Industrial User's facility. Additional research is needed to gain understanding of pretreatment practices/procedures for similar industries. USEPA guidance manuals and categorical standards may list pretreatment options and additional BMPs for specific industries. Pretreatment coordinators at other

municipalities may also provide recommendations. The amount of additional research required will depend on the size and complexity of the Industrial User.

The overall organization of the IWDP should be consistent for all permitted Industrial Users. It is important that the text is clear and concise to minimize misinterpretation of permit requirements. Rationale for discharge limits, required pretreatment equipment, and BMPs must be documented. USEPA’s *Industrial User Permitting Guidance Manual* (USEPA, 1989) provides detailed information on reviewing IWDP applications, conducting site inspections, and items to consider when writing the permit, including structure and wording of permit, common permitting errors/omissions to avoid, flexibility of permit, and the importance of documenting all permit decisions. Thorough documentation of permit decisions and rationale will facilitate defending any challenges to the permit and will make future permit reissuance easier. Errors in the permit language could impact the City’s ability to enforce the permit.

### 5.5 Combined Wastewater Stream Formula

Industrial Users which are categorical dischargers (40 CFR 405 – 471) may be subject to industry-specific categorical pretreatment standards. Discharge limits for all pollutants regulated by categorical pretreatment standards must be included in the permit, even if the Industrial User does not discharge all of the regulated pollutants. The categorical pretreatment standards apply to the regulated process wastewater streams only. If the regulated process wastewater stream is combined with unregulated or diluted wastewater streams prior to sampling or discharge to collection system (Figure 2), then the Combined Wastewater Stream Formula (CWF) or the Flow-Weighted Average (FWA) approach is used. The CWF converts the categorical pretreatment limit for a regulated waste stream into an “alternate limit” that accounts for the presence of unregulated waste streams.



Applying the CWF or FWA requires an understanding of wastewater process flows (i.e., is the regulated waste stream comingled with unregulated/diluted wastewater before or after pretreatment?). CWF is used when a regulated waste stream combines with unregulated/diluted wastewater prior to pretreatment. For cases, where the unregulated/diluted wastewater combines with the regulated waste stream after pretreatment, then the most conservative limit between CWF and FWA is applied. Accurate flow data for the waste streams involved is critical in order to calculate these formulas.

The USEPA's *Guidance Manual for the Use of Production Based Pretreatment Standards and the Combined Waste Stream Formula* (USEPA, 1985) provides additional information on calculating discharge limits for categorical waste streams which are combined with unregulated/diluted wastewater (Figure 3).

**Figure 3**  
**Combined Wastewater Formula**

$$\text{Alternative Limit} = \frac{(Q_R * C_R) + (Q_U * C_U) + (Q_D * C_D)}{Q_T}$$

Where:

- QR = Flow of regulated wastestream
- CR = Categorical Pretreatment Standard limit
- QU = Flow of any unregulated wastestreams
- CU = Concentration of pollutant in unregulated wastestream, can assume zero if no data
- QD = Flow of any diluted wastestreams
- CD = Concentration of pollutant in diluted wastestreams, can assume zero if no data
- QT = Total flow; regulated + unregulated + diluted wastestreams

## 6. References

- USEPA, 1985. *Guidance Manual for the Use of Production Based Pretreatment Standards and the Combined Wastestream Formula*, Permit Division and Industrial Technology Division, September 1985.
- USEPA, 1989. *Industrial User Permitting Guidance Manual*, Office of Water Enforcement and Permits, September 1989.
- USEPA, 2007. *EPA Model Pretreatment Ordinance*, Office of Wastewater Management / Permits Division, EPA 833-B-06-002, January 2007
- ADEQ, 2004. *The Pretreatment Program Procedures and Guidance Manual*, December 2004
- USEPA, 1987. *Guidance Manual on the Development and Implementation of Local Discharge Limitations*. EPA 833-B-87-202, November 1987.
- USEPA, 2004. *Local Limits Development Guidance*, EPA 833-R-04-002A, July 2004.
- USEPA, 2011. *Introduction to the National Pretreatment Program*, EPA 8330B-11-001, June 2011
- USEPA, 1994. *Guidance Manual for Multijurisdictional Pretreatment Programs*, June 1994.