

# Categorical Standards

Christy Anderson, REM – City of Fort Worth Senior Environmental Specialist

Jennifer Flood, REM - City of Fort Worth Senior Environmental Specialist

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# 3 Types of Pretreatment Standards

- General and Specific Prohibitions
- Local Limits
- Categorical Standards

# Applicability of Pretreatment Standards

	General and Specific Prohibitions	Categorical and Pretreatment Standards	Local Limits
All IUs	X		May apply; depends on ordinance and permit provisions
SIUs	X		Generally apply
CIUs	X	X	Generally apply

# Summary of Pretreatment Standards

	General and Specific Prohibitions	Categorical Pretreatment Standards	Local Limits
<b>Development</b>	Established at federal level	Established at federal level	Developed by POTW
<b>Reference</b>	40CFR 403.5(a) &(b)	40 CFR Parts 405-471	Requirements for development found in 40 CFR 405.5 (c) & 403.8 (f)(4). Local limits are usually found in the local sewer ordinance
<b>Applicability</b>	All IUs	CIUs	Typically all IUs or all SIUs
<b>Purpose</b>	Provide for general protection of the POTW. Categorical standards or local limits may be more stringent	Minimum standards based on available treatment technology and pollution prevention methods for controlling pollutants that could cause pass through, interference at the POTW. Local limits may be more stringent.	Provide site specific protection for POTW and its receiving waters. Categorical standards may be higher.

All standards are considered pretreatment standards in CWA Section 307(d) and therefore all standards, including local limits, are enforceable by the EPA and the state even though they were developed at the local level. The POTW is responsible for identifying the standard(s) applicable to each IU and applying the most stringent requirements where multiple provisions exist.

## What are Effluent Limitations Guidelines and Standards?

- Nationally Applicable
- Industry Sector Specific
- Technology Based
- Economic Achievability Determination
- Different Requirements for Direct and Indirect Dischargers
- Categorical Standards apply only to indirect dischargers

## Purpose of Effluent Limitations Guidelines and Standards

- Ensure standards for indirect dischargers are equivalent to standards for direct dischargers
- Takes into account treatment capability of the POTW
- Establishes a level playing field
- Prevent pass through and interference for POTWs

# What do the Guidelines Contain?

## General Provisions:

- Applicability
- Definitions
- Monitoring and Reporting Requirements
- Compliance Dates

## Subparts:

- Special Definitions
- Standards

## Direct Discharge Standards vs. Pretreatment Standards

- Categorical Standards
- Normally do not regulate conventional pollutants – focus on toxic and non-conventional pollutants

# Technologies to Meet Categorical Standards

- **For Direct Dischargers**

BPT – Best Practicable Technology

BCT – Best Conventional Technology

BAT – Best Available Technology Economically Achievable

NSPS – New Source Protection Standards

- **For Indirect Dischargers – Categorical Pretreatment Standards “CIUs”**

**PSES – Pretreatment Standards for Existing Sources**

**PSNS – Pretreatment Standards for New Sources**



# Categorical Pretreatment Standards

## Standards for Indirect Dischargers

- Existing Sources – PSES
- New Sources – PSNS

# PSES

- Not a new source
- May be less stringent than PSNS
- Assumes the need for retrofit treatment of technology/practices
- Compliance date - specified in regulation (no more than 3 years after the effective date)

# PSNS

- Is a new source
- Often more stringent than PSES
- Opportunity to install best and most efficient treatment technology
- Compliance date – ASAP (not to exceed 90 days from discharge)

# Determining PSES vs PSNS

- Check PSES compliance date
- Check new source definition in 40 CFR 403.3(m)
- Questions to ask
  - Construction after PSES compliance date?
  - Total replacement of processes or equipment?
  - Wastewater generating processes are substantially independent from previous operations?
- Get a determination from the state

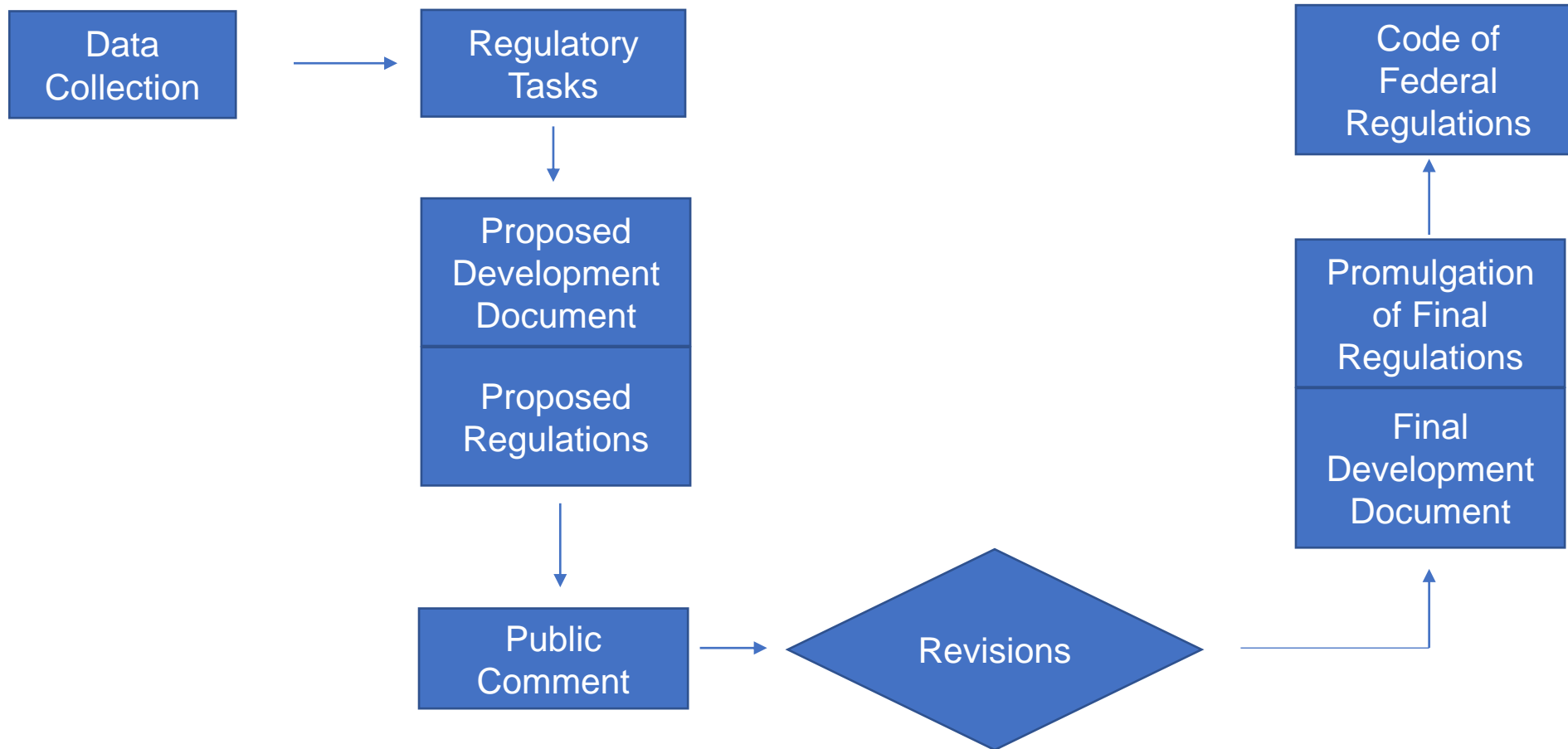
## Categorical Standards

- Applicable to specific industrial categories
- More than 50 categories
- Found in 40 CFR Parts 405-471
- Applicable to direct and indirect dischargers
- Per the CWA 304(m), every 2 years the EPA is required to develop and publish plans for effluent guidelines, review, revision, development and adoption

## Categorical Standards

- National Standards – based on technology available, economic impacts, and processes performed
- Apply to regulated process flow only
- Concentration or mass based limits
- Daily maximum and long term averages
- Developed for new and existing sources

# Categorical Standards Development



## What is a Categorical Industrial User (CIU)?

An industrial user (IU) whose industrial processes meets the applicability requirements for a specific category in 40 CFR Parts 405-471 and is subject to pretreatment standards for existing sources (PSES) or pretreatment standards for new sources (PSNS).

# The Difference between an CIU and SIU

A SIU is a facility that:

- Discharges 25,000 gpd of process wastewater – this DOES NOT INCLUDE sanitary, boiler blowdown, non-contact cooling or heating
- Contributes 5% of the daily dry weather hydraulic flow or loading to the treatment plant
- Is subject to categorical pretreatment standards by the EPA or
- May have a potential impact on the POTW

**\*\*A CIU is a SIU but a SIU is not necessarily a CIU**



# Categorical Determinations

- Look at applicability section of standard
- Look at each subpart applicability
- Note exceptions, exemptions, other standards that apply
- Multiple categorical standards may apply at one facility

# How to Determine if IU is Categorical

- Read the regulations (40 CFR 405- 471)
- Read guidance documents of specific regulations to assist in making a decision
- Relevant knowledge of industrial processes will help in identifying potential categorical processes
- Search of promulgation dates to determine new or existing source

# How to Determine if IU is Categorical – cont'd

Comprehensive Surveys, Permit Applications and Inspection  
Review and Understand Industrial Operations and Processes

- Identify processes that may be subject to categorical regulations
- Inspect the facility to verify processes – ALL OF THEM
- Note raw materials, solvents and chemicals used
- Waste streams generated from the process
- Wastewater flow schematic
- Waste streams discharged to the sewer – rate and frequency of all discharges continuous and batch
- What is the finished product?
- Identify relevant regulations by comparing the industrial processes and the applicability section of the regulation

## How to Determine if IU is Categorical – cont'd

### Industrial User Survey

- General Information – The Basics
  - Company Name
  - Date established at site
  - Contact information
- SIC Codes / NAICS codes
- Daily water usage
- Daily Wastewater flow
- Detailed description of industrial activities and processes
- Types of products produced

## SIC code – NAICS code – Categorical processes How are they connected?

- The Standard Industrial Classification (SIC) code was a system for classifying industries by a four-digit code as a method of standardizing industry classification for statistical purposes across agencies
- The North American Industry Classification System (NAICS) code is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.- modified version of the SIC code
- An industrial user (IU) whose industrial processes meets the applicability requirements for a specific category in 40 CFR Parts 405-471

## 53 Categoricals & Possible SIC code Correlatons

Industry Category	40 CFR	Relevant SIC code(s) -'87 SIC Manual
Dairy products processing	405	2021, 2022, 2023, 2024, 2026
Grain mills manufacturing	406	<b>2041, 2043, 2044, 2045, 2046, 2047</b>
Fruits / vegetable processing	407	2033, 2034, 2035, 2037
Canned / preserved seafood	408	2091, 2092
Sugar processing	409	2061, 2062, 2063
Textile mills	410	<b>2211, 2221, 2231, 2241, 2251, 2252, 2253, 2254, 2257, 2258, 2259, 2261, 2262, 2269</b>
Cement manufacturing	411	3241
Concentrated Animal Feeding Operations	412	0211, 0213, 0214
Electroplating	413	3471, 3672
Organic chems, plastics, synthetic fibers	414	2821, 2823, 2824, 2865, 2869

## Categoricals & Possible SIC code Correlatons (cont.)

Inorganic chemicals	415	2812, 2813, 2816, 2819
Soaps and detergents manufacturing	417	2841
Fertilizer manufacturing	418	2873, 2874, 2875
Petroleum refining	419	2911
Iron and steel manufacturing	420	3312, 3315, 3316, 3317, 3479
Nonferrous metals manufacturing	421	2819, 3331, 3334, 3339, 3341
Phosphate manufacturing	422	2819, 2874
Steam electric power generation	423	4911
Ferroalloy manufacturing	424	3313

# Categoricals & Possible SIC code Correlatons (cont.)

Leather tanning / finishing	425	3111
Glass manufacturing	426	3211, 3221, 3296
Asbestos manufacturing	427	2621, 3292
Rubber manufacturing	428	2822
Timber products processing	429	2491, 2493
Pulp, paper and paperboard	430	2611, 2621, 2631
Meat products	432	2011, 2013, 2077
Metal finishing	433	groups: 34, 35, 36, 37 and 38XX
Coal mining	434	1221, 1222, 1231, 1241



# Categoricals & Possible SIC code Correlatons (cont.)

<b>Oil and gas extraction</b>	<b>435</b>	<b>1311</b>
<b>Mineral mining and processing</b>	<b>436</b>	<b>1422, 1423, 1429, 1442, 1446, 1455, 1459, 1474, 1475, 1479, 1499</b>
<b>Pharmaceutical manufacturing</b>	<b>439</b>	<b>2833, 2834</b>
<b>Ore mining and dressing</b>	<b>440</b>	<b>1011, 1021, 1031, 1041, 1044, 1061, 1094, 1099</b>
<b>Transportation equipment cleaning</b>	<b>442</b>	<b>4491, 4499, 4741, 7699</b>
<b>Paving and roofing materials (tars and asphalt)</b>	<b>443</b>	<b>2951, 2952, 3996</b>
<b>Waste combustors (commercial incinerators combusting hazardous waste)</b>	<b>444</b>	<b>4953, 2819, 2869, 3241, 1422, 1429, 1459, 9999</b>
<b>Landfills</b>	<b>445</b>	<b>4953</b>
<b>Paint formulating</b>	<b>446</b>	<b>2851</b>

## **Categoricals & Possible SIC code Correlatons (cont.)**

<b>Ink formulating</b>	<b>447</b>	<b>2893</b>
<b>Gum and wood chemicals</b>	<b>454</b>	<b>2861</b>
<b>Pesticide chemicals manufacturing, formulation and packaging</b>	<b>455</b>	<b>2879</b>
<b>Explosives</b>	<b>457</b>	<b>2892</b>
<b>Carbon black manufacturing</b>	<b>458</b>	<b>2895</b>
<b>Photographic</b>	<b>459</b>	<b>7221, 7335, 7384, 7819</b>
<b>Hospital</b>	<b>460</b>	<b>8062, 8063, 8069</b>
<b>Battery manufacturing</b>	<b>461</b>	<b>3691, 3692</b>
<b>Plastic molding and forming</b>	<b>463</b>	<b>3081, 3082, 3083, 3084, 3085, 3086, 3087</b>

# **Categoricals & Possible SIC code Correlatons (cont.)**

<b>Metal molding and casting (foundries)</b>	<b>464</b>	<b>3321, 3322, 3324, 3325, 3365, 3366, 3369</b>
<b>Coil coating</b>	<b>465</b>	<b>3479, 3492, 3411</b>
<b>Porcelain enameling</b>	<b>466</b>	<b>3431, 3631, 3632, 3633, 3639, 3469, 3479</b>
<b>Aluminum forming</b>	<b>467</b>	<b>3353, 3354, 3355, 3357, 3363</b>
<b>Copper forming</b>	<b>468</b>	<b>3351, 3357, 3463</b>
<b>Electrical and electronic components</b>	<b>469</b>	<b>3671, 3674, 3679</b>
<b>Nonferrous metals forming and metal powders</b>	<b>471</b>	<b>3356, 3357, 3363, 3497</b>

## CIU Determination – Exception to the Rule

An IU which is regulated in a category with promulgated effluent guidelines and standards that do not contain PSES or PSNS but provides a reference only to 40 CFR 403 or Part 128 (prohibited discharge standards)

- Would not be considered a CIU due to the absence of PSES or PSNS requirements

**\*This does not mean they are not a SIU!**

# Categorical Standards

- Self implementing
- Enforced via permits issued by the Control Authority
- Typically applied at “end of process”
- If standards cannot be applied at “end of process” -combined waste stream formula must be used to establish limits.

# How are Effluent Limit Guidelines Expressed?

- Numeric values for specific pollutants
  - Concentration limits (mg/L) **EX: Metal Finishing 40 CFR 433.17**
  - Mass limits based on production rates (kg/1000 kkg or pounds per million pounds ) **EX: Metal Molding and Casting Subpart A – Aluminum Casting 40 CFR 464.15**
  - Mass limits based on a concentration standard (multiplied by industry's process wastewater flow) **EX: Organic Chemicals and Synthetic Fibers 40 CFR 414.24 and 40 CFR 414.26**
- Best Management Practices
- Prohibitions – including No discharge

## Best Management Practices as Categorical Standards

- Certification in place of monitoring
- Specified pollutants
- Management plan must be approved and implemented

Main one typically seen is Toxic Organic Management Plan for Electroplating (40 CFR 413.03) and Metal Finishing (40 CFR 433.12)

## Prohibitions - Examples

- 40 CFR 415.36 – Inorganic chemicals manufacturing, Subpart C calcium carbide production subcategory, PSNS  
*There shall be no discharge of process wastewater pollutants to navigable waters.*
- 40 CFR 423.16(a) – Steam electric power generating, PSES  
*There shall be no discharge of polychlorinated biphenol compounds such as those used for transformer fluid.*
- 40 CFR 461.14(b) – Battery manufacturing, Subpart A cadmium subcategory, PSES  
*There shall be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed above.*
- 40 CFR 435.33(a)(1) and 435.34(a)(1) Oil and Gas Extraction, Subpart A, Onshore subcategory, PSES and PSNS  
*There shall be no discharge of wastewater pollutants associated with production, field exploration, drilling, well completion, or well treatment for unconventional oil and gas extraction (including, but not limited to, drilling muds, drill cuttings, produced sand, produced water) into publicly owned treatment works.*



## Examples Industrial Categories Subject to Pretreatment Standards

- Metal Finishing - including, but not limited to:  
Electroplating Coating (chromating, phosphating, and coloring), Electroless Plating  
Anodizing, Chemical Etching and Milling  
Printed Circuit Board Manufacturing  
Manufacturing
- Organic Chemicals, Plastics & Synthetic Fibers
- Inorganic Chemicals
- Soap and Detergent
- Semiconductor Manufacturing - including, but not limited to: Cathode Ray Tube manufacturing  
Electronic Crystals production  
Luminescent materials manufacturing  
Phosphorescent coatings
- Pharmaceuticals
- Pesticides Production - including, but not limited to: Manufacturing  
Packing and repackaging  
Formulation
- Porcelain Enameling
- Transportation Equipment Cleaning - Including, but not limited to: Tank truck cleaning, Railcar tank cleaning
- Centralized Waste Treatment  
Metals Treatment and recovery  
Oils Treatment and recovery  
Organics Treatment and recovery  
Multiple waste streams

# Thank you

Christy Anderson – [Lara.Anderson@fortworthtexas.gov](mailto:Lara.Anderson@fortworthtexas.gov)  
Jennifer Flood – [Jennifer.Flood@fortworthtexas.gov](mailto:Jennifer.Flood@fortworthtexas.gov)

