



ISN'T THAT THEIR JOB?

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Who's in the room today?

Municipalities

POTWs and the pretreatment, stormwater, and utility staff who run those programs

Industrial Dischargers

Facilities sending process wastewater to a POTW or discharging directly under a permit

The Players



MUNICIPALITY

- Average design flow of 1.2 MGD
- Discharges to a state designated scenic river

INDUSTRY

- Produces a popular liquid beverage.
- Ramping up production at a newly constructed facility
- At full capacity, expected discharge is 225,000 gpd, initial discharge is 110,000 gpd



The Industry needs a permit to discharge to the WWTP

The Story

- Prior to beginning construction, the **Industry** coordinated with municipal representatives regarding the discharge to the **WWTP**
- **Municipality** indicated that the expected waste from the **Industry** would not be an issue for the WWTP
- **Municipality** requested the **Industry** complete an industrial discharge permit application
- **Municipality** never issued a discharge permit to the **Industry**
- The **Industry** began to discharge...

It didn't go as anticipated...

The Municipality
violated their
NPDES permit

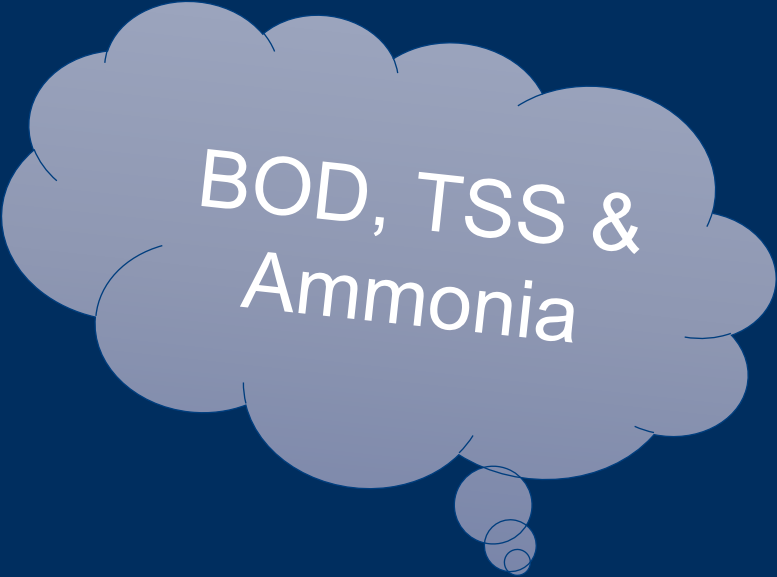
Blamed the
Industry

The Ohio EPA got
Involved

Who should have treated the discharge?

Municipality

Was overwhelmed by the discharge



BOD, TSS &
Ammonia

Industrial Discharger

Had not installed treatment for the wastewater

A few minor details...

- The **Municipality** does not have an Industrial Pretreatment Program
- The **Municipality** did not have the authority to issue a discharge permit to the **Industry**
- The Ohio EPA is the Control Authority
- The “permission” for the **Industry** to discharge was a handshake deal, with someone who no longer works at the **Municipality**
- The **Industry** discharged without a permit

What is the Industrial Pretreatment Program (IPP)?

- Program to regulate industrial discharges to publicly owned treatment works (POTWs)
- Established under Clean Water Act Section 307
- Implemented through EPA's General Pretreatment Regulations (40 CFR 403)
- Controls industrial discharges to POTWs to help prevent pass-through and interference, allows for reuse of biosolids and effluent
- Applies any time an Industry discharges to a POTW, whether the POTW has an industrial pretreatment program or not



IPP Objectives

- Prevent the introduction of pollutants into a POTW that will interfere with the operation of the POTW, including interference with its use or disposal of municipal sludge
- Prevent the introduction of pollutants into a POTW that will pass through the treatment works or otherwise be incompatible with such works
- Improve opportunities to recycle and reclaim municipal and industrial wastewaters and sludges
- Protect worker safety



Program Triggers

A Missouri municipality or sewer district is typically required to develop and maintain an approved Industrial Pretreatment Program (IPP) if:

- A POTW has a total design flow greater than 5.0 MGD
- The POTW receives industrial wastes that have the potential to pass through the system untreated, interfere with standard treatment operations, or violate environmental standards.
- MDNR can also require smaller POTWs (under 5.0 MGD) to create a program if a specific local industry poses an operational or environmental risk.

Missouri's Implementation of the IPP

- MDNR is delegated to implement the IPP by EPA Region 7
- Programs must address Missouri-specific requirements
- Implements pretreatment within NPDES (MSOP) permitting framework
- MDNR conducts program audits and annual report reviews
- MDNR provides compliance assistance for IPPs



Who has an IPP?

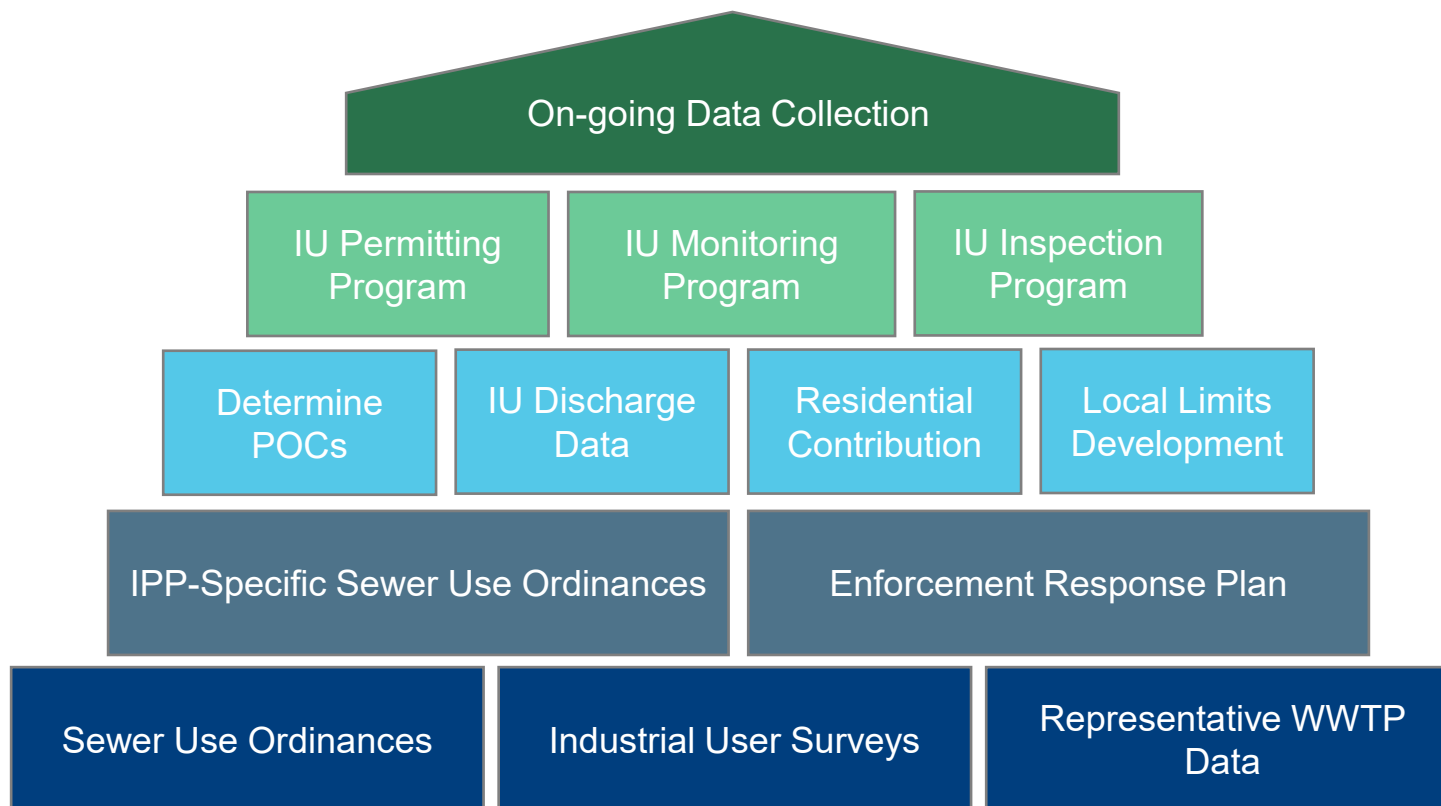
**There are
approximately 47
IPPs in Missouri**



- STL MSD
- Little Blue Valley Sewer District
- Duckett Creek Sanitary District
- KC Water
- Independence
- Blue Springs
- Lee's Summit
- Springfield
- Joplin
- Columbia
- Jefferson City
- Lebanon
- St. Joseph
- O'Fallon
- St. Peters
- Wentzville
- Washington
- Monett
- Carthage
- Marshall
- Moberly
- Union
- Farmington
- Sullivan
- Mexico

What does this mean for Municipalities?

IPP Implementation



What does this mean for Industries?

- Governs industrial discharges as a critical component of the Clean Water Act
- Keeps pollutants of concern (POCs) in industrial discharge from interfering with municipal treatment
- Prevents POCs in industrial discharge from passing through the treatment plant untreated
- Safeguards public health and the environment
- Protects the collection system and treatment infrastructure your facility relies on
- Keeps the POTW in compliance, which keeps industrial discharge authorization intact

Are you an Industrial User?

An industrial user (IU) is defined as any non-domestic source that introduces pollutants into a POTW collection system.

- Categorical Industrial User (CIU)
 - High-risk industries, regardless of flow
- Significant Industrial User (SIU):
 - $\geq 25,000$ GPD of process wastewater
 - $\geq 5\%$ of the POTW's average dry weather hydraulic **or** organic capacity
 - Poses an adverse risk to POTW operations



Major Components of the Industrial Pretreatment Program

Sewer Use Ordinances

Local Limits

**Enforcement Response
Plans**

Industrial User Surveys

Industrial User Permits

Industrial User Monitoring

Who needs a permit?

- **CIUs** and **SIUs** always need a permit
- Other industrial users, food service establishments, commercial facilities, dentists, and hospitals sometimes need a permit
- When in doubt, ask!
- Industrial User Survey
 - Not optional (IPPs are required to do this)
 - Used by POTW to evaluate potential regulated industries
 - Sometimes serve as Industrial Discharge Permit Application



Permit Contents

- Effective Duration
- Process/Operational Description
- Description of Pretreatment System
- List of Permitted Discharge Points
- General Discharge Prohibitions
- Applicable Federal Categorical Standards
- Local Limits
- Sampling and Monitoring Requirements
- Reporting Requirements
- Record Keeping Requirements
- Upset and Bypass Notification Requirements
- Slug Discharge Control Plan Requirements
- Special Conditions
- Signatory Requirements

Permit Development Process

- Use Industrial User Survey information
- Site Inspections
- Baseline Monitoring
- Applicable Categorical Standards
- Local Limits
- POTW-specific concerns such as treatment capacity and sludge quality
- Long-term data needs



Regulatory Notes

- Industrial Discharge Permits translate federal, state, and local pretreatment requirements into facility-specific, enforceable conditions
- POTWs with approved pretreatment programs must issue control mechanisms under 40 CFR 403.8(f)(1), which requires the legal authority to regulate industrial discharges.
- Minimum control mechanism requirements are outlined in 40 CFR 403.8(f)(1)(iii) and 40 CFR 403.12, including monitoring, reporting, and enforcement provisions.
- In Missouri, IU permits are implemented through the IPP requirements contained in the POTW's MSOP

Monitoring Industrial Wastewater

- Joint effort between Control Authority and Discharger
- Specific frequency requirements for CIUs and SIUs
 - 2x/year or every 6 months

General Minimum Monitoring Frequency

Industrial Flow (GPD)	Conventional Pollutants, Inorganic Pollutants, Cyanide, and Phenol	Gas Chromatography (GC) or GC/Mass Spectroscopy Organics
0-10,000	1/month	2/year
10,001-50,000	2/month	4/year
50,001-100,000	1/week	1/month
100,001-240,000	2/week	2/month
>240,000	3/week	4/month

Where do the permit limits come from?

1

General Prohibitions

2

Federal Categorical Standards

3

Local Limits

General Prohibitions - 40 CFR 403.5(a)

A User may not introduce into a POTW any pollutant(s) which cause Pass Through or Interference. These general prohibitions and the specific prohibitions in paragraph (b) of this section apply to each User introducing pollutants into a POTW whether or not the User is subject to other National Pretreatment Standards or any national, State, or local Pretreatment Requirements.



Specific Prohibitions - 40 CFR 403.5(b)

- 1) Pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, wastestreams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21;
- 2) Pollutants which will cause corrosive structural damage to the POTW, but in no case Discharges with pH lower than 5.0, unless the works is specifically designed to accommodate such Discharges;
- 3) Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in Interference;
- 4) Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a Discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW.
- 5) Heat in amounts which will inhibit biological activity in the POTW resulting in Interference, but in no case heat in such quantities that the temperature at the POTW Treatment Plant exceeds 40 °C (104 °F) unless the Approval Authority, upon request of the POTW, approves alternate temperature limits.
- 6) Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
- 7) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;
- 8) Any trucked or hauled pollutants, except at discharge points designated by the POTW.

Other Prohibitions



*If you want to
copy from your
neighbors.*

1. Wastewater having a pH less than 6.0 or more than 11
2. Trucked or hauled wastes or pollutants
3. Stormwater, surface water, ground water, artesian well water, roof runoff, swimming pool drainage, condensate, de-ionized water, non-contact cooling water, or treated wastewater, unless specifically authorized
4. Sludge, screenings, or other residues from the pretreatment of industrial wastes
5. Any waters or wastes having chlorine demand greater than 30 parts per million by weight
6. Wastewater causing, alone or in conjunction with other sources, the POTW's effluent to fail toxicity test
7. Detergents, surface-active agents, or other substances which that might cause excessive foaming in the POTW
8. Medical Wastes, except as specifically authorized in a discharge permit
9. Solids greater than one inch (1.0") in any dimension
10. Noxious or malodorous liquids, gases, solids, or other wastewater which, either singly or by interaction with other wastes, are sufficient to create a public nuisance or a hazard to life, or to prevent entry into the sewers for maintenance or repair
11. Wastewater which imparts color which cannot be removed by the treatment process
12. Wastewater containing any radioactive wastes or isotopes except in compliance with applicable State or Federal regulations
13. Fats, oils, or greases of animal or vegetable origin in concentrations >100 mg/l

Federal Categorical Standards

- Direct and indirect dischargers
- National, uniform, technology-based standards that apply to:
 - Specific industrial categories
 - Specific industrial processes
 - Specific pollutants for each industry
- 40 CFR Parts 405-471
- Apply at end of process
- Pretreatment Standards for New Sources (PSNS)
- Pretreatment Standards for Existing Sources (PSES)



Is your Industry Categorical?

- Airport Deicing
- Aluminum Forming
- Asbestos Manufacturing
- Battery Manufacturing
- Canned and Preserved Fruits and Vegetable Processing
- Canned and Preserved Seafood (Seafood Processing)
- Carbon Black Manufacturing
- Cement Manufacturing
- Centralized Waste Treatment
- Coal Mining
- Coil Coating
- Concentrated Animal Feeding Operations
- Concentrated Aquatic Animal Production (Aquaculture)
- Construction and Development
- Copper Forming
- Dairy Products Processing
- Dental Office
- Electrical and Electronic Components
- Electroplating
- Explosives Manufacturing
- Ferroalloy Manufacturing
- Fertilizer Manufacturing
- Glass Manufacturing
- Grain Mills
- Gum and Wood Chemicals Manufacturing
- Hospitals
- Ink Formulating
- Inorganic Chemicals Manufacturing
- Iron and Steel Manufacturing
- Landfills
- Leather Tanning and Finishing
- Meat and Poultry Products
- Metal Finishing
- Metal Molding and Casting (Foundries)
- Metal Products and Machinery
- Mineral Mining and Processing
- Nonferrous Metals Forming and Metal Powders
- Nonferrous Metals Manufacturing
- Oil and Gas Extraction
- Ore Mining and Dressing (Hard Rock Mining)
- Organic Chemicals, Plastics & Synthetic Fibers
- Paint Formulating
- Paving and Roofing Materials (Tars and Asphalt)
- Pesticide Chemicals
- Petroleum Refining
- Pharmaceutical Manufacturing
- Phosphate Manufacturing
- Photographic
- Plastics Molding and Forming
- Porcelain Enameling
- Pulp, Paper and Paperboard
- Rubber Manufacturing
- Soap and Detergent Manufacturing
- Steam Electric Power Generating
- Sugar Processing
- Textile Mills
- Timber Products Processing
- Transportation Equipment Cleaning
- Waste Combustors

**There are
currently 59
Categories**

Example: 40 CFR 433

PSES FOR ALL PLANTS EXCEPT JOB SHOPS AND INDEPENDENT PRINTED CIRCUIT BOARD MANUFACTURERS

Pollutant or pollutant property	Maximum for any 1 day	Monthly average shall not exceed
	Milligrams per liter (mg/l)	
Cadmium (T)	0.69	0.26
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO	2.13	

Alternatively, for industrial facilities with cyanide treatment, upon agreement between a source subject to those limits and the pollution control authority. The following amenable cyanide limit may apply in place of the total cyanide limit specified in [paragraph \(a\)](#) of this section:

Pollutant or pollutant property	Maximum for any 1 day	Monthly average shall not exceed
	Milligrams per liter (mg/l)	
Cyanide (A)	0.86	0.32

§ 433.17 Pretreatment standards for new sources (PSNS).

(a) Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with [40 CFR part 403](#) and achieve the following pretreatment standards for new sources (PSNS):

Expand
Table

PSNS

Pollutant or pollutant property	Maximum for any 1 day	Monthly average shall not exceed
	Milligrams per liter (mg/l)	
Cadmium (T)	0.11	0.07
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO	2.13	

(b) Alternatively, for industrial facilities with cyanide treatment, and upon agreement between a source subject to these limits and the pollution control authority, the following amenable cyanide limit may apply in place of the total cyanide limit specified in [paragraph \(a\)](#) of this section:

Local Limits

Apply at connection to the POTW “End-of-Pipe”

Developed by the POTW

POTW Specific

Technically-based limits

Developed for pollutants of concern (POCs)

15 Federal POCs

Arsenic

Cadmium

Cyanide

Chromium

Copper

Lead

Mercury

Molybdenum

Nickel

Selenium

Silver

Zinc

Ammonia

Biochemical
Oxygen
Demand (BOD)

Total
Suspended
Solids (TSS)

Additional Sources of POCs

MSOP Permits

Water Reuse

Water Quality Impairments

Land Application Requirements

TMDLs

Compost Requirements

Water Quality Standards

Local Limits Data Needs

- Flow Data
 - POTW
 - Industrial
- Domestic/Background Contributions
- WPCF Removal Efficiency
 - WPCF Influent/Effluent Concentrations
- Industrial User Contributions
- Discharge Concentrations



Local Limits - Simplified

Develop
Maximum
Allowable
Headworks
Loading

Calculate
Maximum
Allowable
Industrial Load

Allocate the Load
to the Industrial
Users



Maximum Allowable Headworks Loading

Maximum Allowable Headworks Loading (MAHL) is the maximum amount of a specific pollutant that a POTW can receive at the headworks without causing pass-through or interference



Pass-Through Criteria
Process Interference Criteria
Biosolids Disposal Criteria

POTW Influent
and Effluent
Data



Maximum Allowable Industrial Loading

Maximum Allowable Industrial Loading (MAIL) is the maximum mass of a specific pollutant that a POTW can receive from all permitted industrial users combined

MAHL

—
Domestic
Background
Contribution

Hauled
Wastes

Allowance
for Future
Growth

Margin of
Safety

MAIL



“Once the MAIL is calculated, the POTW has substantial flexibility in allocating the pollutant load among its IUs”

*- 2004 U.S. EPA Local Limits
Development Guidance Pg. 6-12*

Methods of Allocation



Uniform concentration method = $\text{MAIL} / \text{All industrial flow}$



Contributory flow method = $\text{MAIL} / \text{Contributing industries}$



Mass-based allocations = $\text{MAIL} * \text{Industry's portion of load}$

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