Industrial Pretreatment Program (IPP) in Michigan

Michigan Environmental Compliance Conference

EGLE Water Resources Division

June 9, 2026

Rodger Fain

Agenda

Industrial Pretreatment Program (IPP) Overview

- History
- What is it?
- How does it work?

Does my POTW need an IPP?

Examples

What is the Industrial Pretreatment Program?

History of Water Protection

- 1899 – Rivers and Harbors Act
- 1948 – FWPCA (PL 80-845)
- 1956 – FWPCA (PL 84-660)
- 1965 – Water Quality Act (PL 89-234)
- **1970 – EPA Established through Executive Order**
- 1972 – FWPCA (PL 92-500)
- **1977 – FWPCA / Clean Water Act (PL 95-217)**
- 1987 – Water Quality Act (PL 100-4)

CWA Basis for Pretreatment Programs

- Clean Water Act (33 USC 1251, et seq.)
  - Sec. 101 – Goals & Policy
  - Sec. 212 – Definitions
  - Sec. 301 – Effluent Limitations
  - Sec. 307 – Toxic and Pretreatment Effluent Limitations
  - Sec. 308 – Inspections, Monitoring & Entry
  - Sec. 309 – Enforcement
  - Sec. 402 – NPDES Program
  - Sec. 502 – Definitions
  - Sec. 507 – Employee Protection

Evolution of Pretreatment Regulations

- 1973 – Pretreatment Rules included in 40 CFR Part 128
- 1978 – 40 CFR Part 403 Promulgated
- 1983 – POTW Program Approval Deadline
- 1985 – Pretreatment Implementation Review Task Force (PIRT) Report released
- 1986 – Domestic Sewage Study (DSS) Report to Congress
- 1988 – PIRT Rules Promulgated
- 1990 – DSS Regulations Promulgated
- 1997 – Program Modification Regulations Streamlined
- 2005 – Pretreatment Streamlining Rule Promulgated

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What is Pretreatment?

The term *Pretreatment* is defined in the General Pretreatment Regulations at 40 CFR 403.3(s):

- " . . . the **reduction** of the amount of pollutants, the **elimination** of pollutants, or the **alteration** of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. The reduction or alteration may be obtained by physical, chemical or biological processes, process changes or by other means, except as prohibited by §403.6(d). . . ."
- Remember: "Dilution is Not the Solution to Pollution"

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What is the Pretreatment Program

- National program
- Clean Water Act
- National Pollutant Discharge Elimination System (NPDES) program component
- State Groundwater program component
- Regulates industrial facilities discharging process wastewater to publicly owned treatment works (POTWs)

Objectives of General Pretreatment Regulations:

- To prevent the introduction of pollutants into POTWs which will interfere with the operation of a POTW, including interference with its use or disposal of municipal sludge;
- To prevent the introduction of pollutants into POTWs which will pass through the treatment works or otherwise be incompatible with such works; and
- To improve opportunities to recycle and reclaim municipal and industrial wastewaters and sludges.

What is its Purpose?

- Essentially, Industrial Pretreatment is a form of “source control” which enables the treatment of wastewater to begin with the generator of the pollutant rather than at the City’s Wastewater Treatment Plant.
- This is especially important for non-compatible pollutants such as Toxic Organics, Cyanide and Heavy Metals, which can inhibit biological treatment processes or pass through the wastewater treatment plant untreated to the receiving stream.
- Control of Compatible Pollutants by Industries at the source provides a “jump-start” to treatment and helps maintain the loading of these pollutants within levels that the wastewater plant was designed to effectively treat.

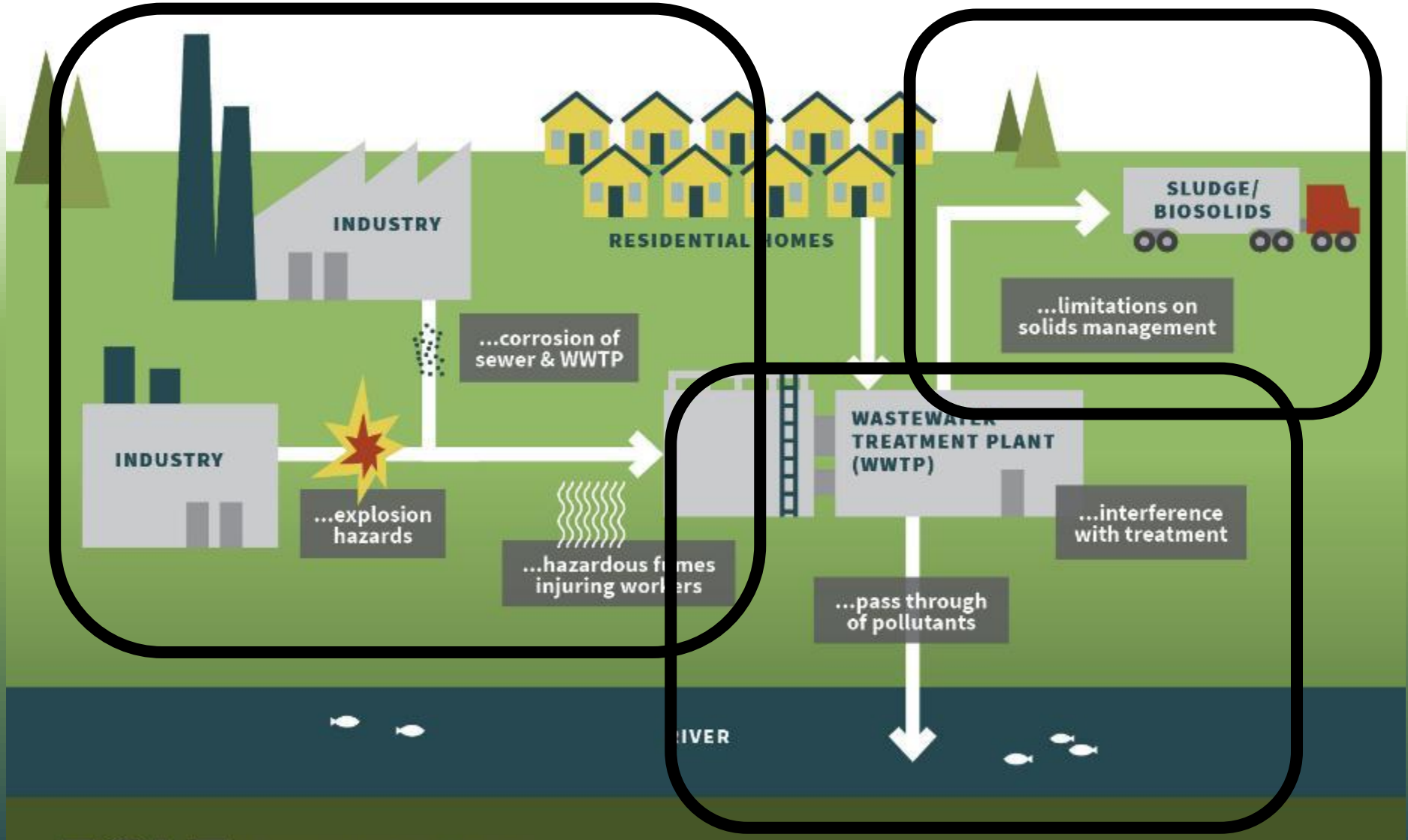
Interference

Any Discharge **that interferes with any operation** of a POTW and **causes a violation** of their POTW Permit

Pass Through

Any Discharge that **exits the POTW** into State Waters **at concentrations causing or contributing to a violation** of the Natural Resources and Environmental Protection Act (NREPA)

Industrial Pretreatment Programs Protect Against...



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08/2019

State Delegation from EPA

NPDES	Pretreatment
Yes	Yes
Yes	No
Yes	Part
No	No

How does the Industrial Pretreatment Program work?

How is IPP regulated?

Federal: EPA
Clean Water Act
40 CFR 403 - 471

Local: Municipalities
Sewer Use Ordinances

State: EGLE
NREPA (Part 31; Part 23)
NPDES Permit Delegation Authority

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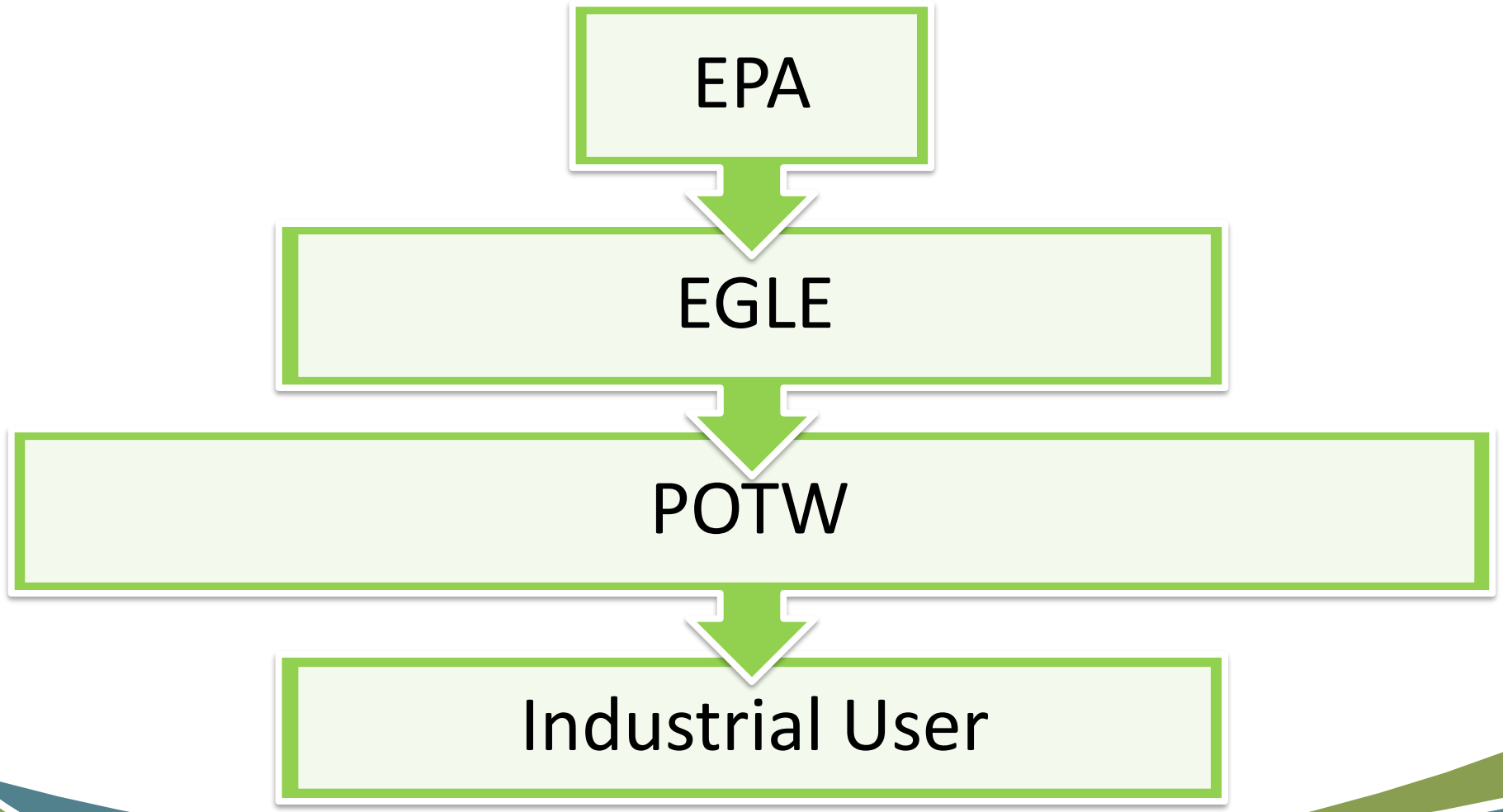
IPP Organization in Michigan



IPP Organization in Michigan

EPA

- Oversees the program nationwide
- Implements the program in some states, regulates the states in others
- Provides guidance and final say on federal regulations

Approval Authority (EGLE)

- Approves new IPPs and IPP modifications
- Regulates the POTW's pretreatment program – inspections and file reviews

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IPP Organization in Michigan

Control Authority (POTW)

Protects itself from passthrough and interference

Develops the IPP

- Sewer Use Ordinance
- Enforcement Response Plan & Procedures
- Local Limits

Implements the IPP and oversees industrial users

- IU Permits
- Samples & Inspects IUs

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IPP Organization In Michigan

Industrial Users

Follows IU permit from POTW

- Sampling requirements
- Reporting requirements
- Notifications to the POTW

Maintains pretreatment system, if applicable

Follows categorical standards, if applicable

Legal Authority: Sewer Use Ordinance (SUO)

- Required to be approved by EGLE for all IPP POTWs
- Establishes legal authority for the municipality to:
  - Identify industrial users subject to IPP
  - Issue permits
  - Set local discharge limits
  - Conduct inspections and monitoring
  - Enforce the IPP

Even if you are not required to have an IPP, your SUO can protect your local infrastructure and treatment processes!

National Pretreatment Standards

- Promulgated at the Federal level
- Enforceable Nationwide
- Two Major Types
  - Prohibited Discharge Standards (40 CFR Part 403.5)
  - Categorical Discharge Standards (40 CFR Parts 405 - 471)

Prohibited Discharge Standards

- National Standards w/ general application (i.e., Horizontal Standards);
- Apply whether or not the POTW has an approved pretreatment program;
- Apply whether or not the industrial user has been issued a permit;
- Designed to protect against pass through and interference, protect the POTW collection system, and to promote worker safety and beneficial biosolids use.

Prohibited Discharge Standards

- General Prohibitions
  - Prohibit the introduction of pollutants to the POTW that would result in *pass through* to the receiving stream of untreated pollutant at levels that would violate the POTW's NPDES Permit.
  - Prohibit the discharge of pollutants to the POTW that would result in *interference* with the operation of the POTW's treatment works.

Specific Prohibitions

Apply to ALL nondomestic users

Pollutants that contribute to the following shall not be introduced into a POTW:

- Fire or Explosions (Flashpoint <140ºF)
- Corrosive structural damage (pH<5)
- Blocked flow
- Excess flow rate or concentration
- Heat (>104ºF)
- Petroleum oil and other non-food related oils
- Toxic gases (worker health & safety)
- Trucked wastewater (except at designated points)

Categorical Discharge Standards

- National Standards w/ specific application (i.e., Vertical Standards)
- Limitations on pollutant discharges to publicly owned treatment works (POTWs), promulgated by EPA in accordance with Section 307 of the Clean Water Act
- Apply to specific industrial categories; specific processes w/in category; and specific pollutants w/in process discharge
- Enforceable “End-of-Process” unless adjusted using CWA and/or FWA formulas for “End-of-Pipe” application.

Categorical Discharge Standards

- Technology-based standards;
- Apply whether or not the POTW has an approved pretreatment program;
- Apply whether or not the industrial user has been issued a permit;
- Industrial Users regulated through such standards are called Categorical Industrial Users (CIUs);
- The standards applicable to industrial discharges from CIUs are codified in 40 CFR Parts 405 - 471.

Category List 40 CFR Parts 405 - 471

Category Name	Part	Category Name	Part
Dairy Products Processing	405	Mineral Mining and Processing	436
Grain Mills	406	Centralized Waste Treatment	437
Canned and Preserved Fruits and Vegetable Processing	407	Metal Products and Machinery	438
Canned and Preserved Seafood Processing	408	Pharmaceutical Manufacturing	439
Sugar Processing	409	Ore Mining and Dressing	440
Textile Mills	410	Dental Office	441
Cement Manufacturing	411	Transportation Equipment Cleaning	442
Concentrated Animal Feeding Operations (CAFO)	412	Paving and Roofing Materials	443
Electroplating	413	Waste Combustors	444
Organic Chemicals, Plastics and Synthetic Fibers	414	Landfills	445
Inorganic Chemicals Manufacturing	415	Paint Formulating	446
Soap and Detergent Manufacturing	417	Ink Formulating	447
Fertilizer Manufacturing	418	Airport Deicing	449
Petroleum Refining	419	Construction and Development	450
Iron and Steel Manufacturing	420	Concentrated Aquatic Animal Production (Aquaculture)	451
Nonferrous Metal Manufacturing	421	Gum and Wood Chemicals	454
Phosphate Manufacturing	422	Pesticide Chemicals Manufacturing and Formulating	455
Steam Electric Power Generating	423	Explosives Manufacturing	457
Ferroalloy Manufacture	424	Carbon Black Manufacturing	458
Leather Tanning and Finishing	425	Photographic	459
Glass Manufacturing	426	Hospitals	460
Asbestos Manufacturing	427	Battery Manufacturing	461
Rubber Manufacturing	428	Plastics Molding and Forming	463
Timber Products Processing	429	Metal Molding and Casting	464
Pulp, Paper, and Paperboard	430	Coil Coating	465
Meat and Poultry Products	432	Porcelain Enameling	466
Metal Finishing	433	Aluminum Forming	467
Coal Mining	434	Copper Forming	468
Oil and Gas Extraction	435	Electrical and Electronic Components	469
		Nonferrous Metals Forming and Metal Powders	471

Gray background indicates Pretreatment Standards

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Local Limits

- Promulgated at the Local Level
- Enforceable Locally
- Types
  - Numeric
  - Additional Specific Prohibitions
  - BMPs (If Authorized by Local Ordinance)
- Enforceable “End-of-Pipe”
- Developed to reflect specific needs and capabilities at individual POTWs.

Local Limits

- Designed to protect the POTW receiving waters.
- POTWs must develop local limits or demonstrate that they are unnecessary [Reference: 40 CFR 403.8(f)(4)]
- Local limits are needed when pollutants are received that could result in pass through or interference at the POTW [Reference: 40 CFR 403.5(c)]
- Essentially, local limits translate the general prohibited discharge standards of 40 CFR 403.5 to site-specific needs.

Local Limits

- Protect the POTW (Equipment and Processes)
  - pH, Temperature, etc.
  - Inhibition Based
- Protect the Receiving Waters
  - NPDES Based
  - Water Quality Criteria Based (Federal and MI Part 4)
- Protect Sludge Disposal/Beneficial Re-use Options
  - Federal Sludge Quality Based (40 CFR 503)
  - State Sludge Quality Based (MI Part 24, MAC R 323.2409)
- Protect POTW Personnel
  - Toxicity
  - Flammability and/or Combustibility

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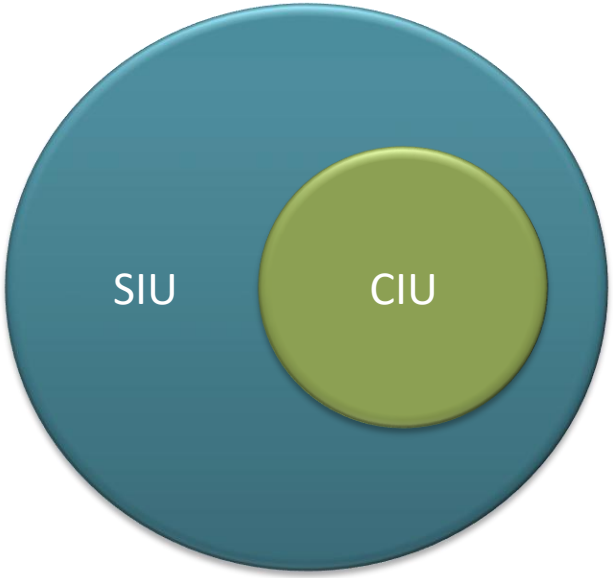
Categorical Industrial Users (CIU)

- Indirect dischargers
- In a category that has pretreatment standards
- Required to be regulated under an IPP

Significant Industrial Users (SIUs)

Categorical Industrial User (CIU)

OR



Any nondomestic user which:

- Discharges ≥ 25,000 GPD of process wastewater
- Contributes ≥ 5% of the dry weather hydraulic or organic loading
- Has the potential to adversely impact the POTW or for violating any pretreatment standard or requirement

Does my POTW need a pretreatment program?

When is an IPP Required in Michigan?

- When (at least) one CIU or SIU discharges to the POTW
- POTW receives nondomestic wastewater containing:
  - pollutants that may Pass through or Interfere with POTW Operations
  - Pollutants regulated under Pretreatment Standards as defined in 40 CFR 403.3(l)
- When it's required via:
  - NPDES permit
  - State Permit
  - Order of the Department
- See 40 CFR 403.8(a) and MAC R 323.2305(1) and (2)

Types of IPPs

- Federal Program (FIPP)
  - POTW Design Flow is > 5 MGD
- Michigan Program (MIPP)
  - POTW Design Flow is </= 5 MGD; or
  - POTW is regulated under a MI Groundwater Rule discharge permit

How do I know if an SIU is discharging to my POTW?

- Is there interference at the plant?
- Is there pass-through of pollutants at the plant?
- Are you seeing non-conventional pollutants in your plant influent? (toxics, organics, metals, etc.)
- Is your biosolids quality being affected?
- Are you seeing inconsistent high strength discharges from industries? (i.e. slugs)

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How do I know if an SIU is discharging to my POTW?

- Are you seeing PFAS in your influent above the criteria?
- Does your POTW accept septage or landfill leachate?
- Did you have WET testing violations?
- Do you know of an industry in your municipality that would be considered categorical?

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SIU may be discharging to POTW
What are the next steps?

- Contact your EGLE IPP District Coordinator
- Submit via MiEnviro documentation on potential SIUs
  - NPDES or Groundwater Unscheduled Permit Required Reports
  - Source Tracking Status Report
  - Short-Term Waste Characterization Study Report
  - Feasibility Study Report
- EGLE IPP Staff will review submissions and determine if industries meet the definition of an SIU
- Just because an IPP is not required today, does not mean it will never be required

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Advice for POTWs (1/2)

1. Keep track of new facilities that come to town

2. Be involved in the process early
   - Advise new users of SUO requirements, local limits and categorical pretreatment standards where applicable
   - Obtain facility information, wastewater characteristics and volume

3. If they're a federally regulated categorical industry, you may be required to develop an IPP.

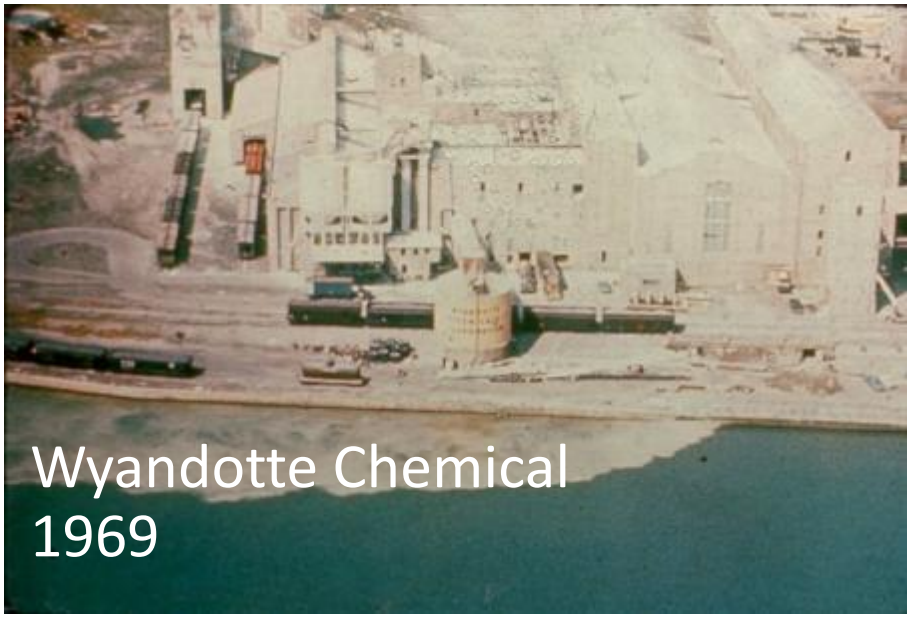
Advice for POTWs (2/2)

4. Enter into a formal enforceable agreement and/or permit as needed

5. Even if an IPP is not required, you can still use your sewer rules to regulate industrial users
   - General and specific prohibitions
   - Other SUO requirements

6. Call your EGLE IPP district staff for advice! We can help!

EXAMPLES



Back in the 1960's direct industrial discharges into our lakes and streams caused serious and visible pollution problems.

Explosions

Blockage

Interference

Pass Through

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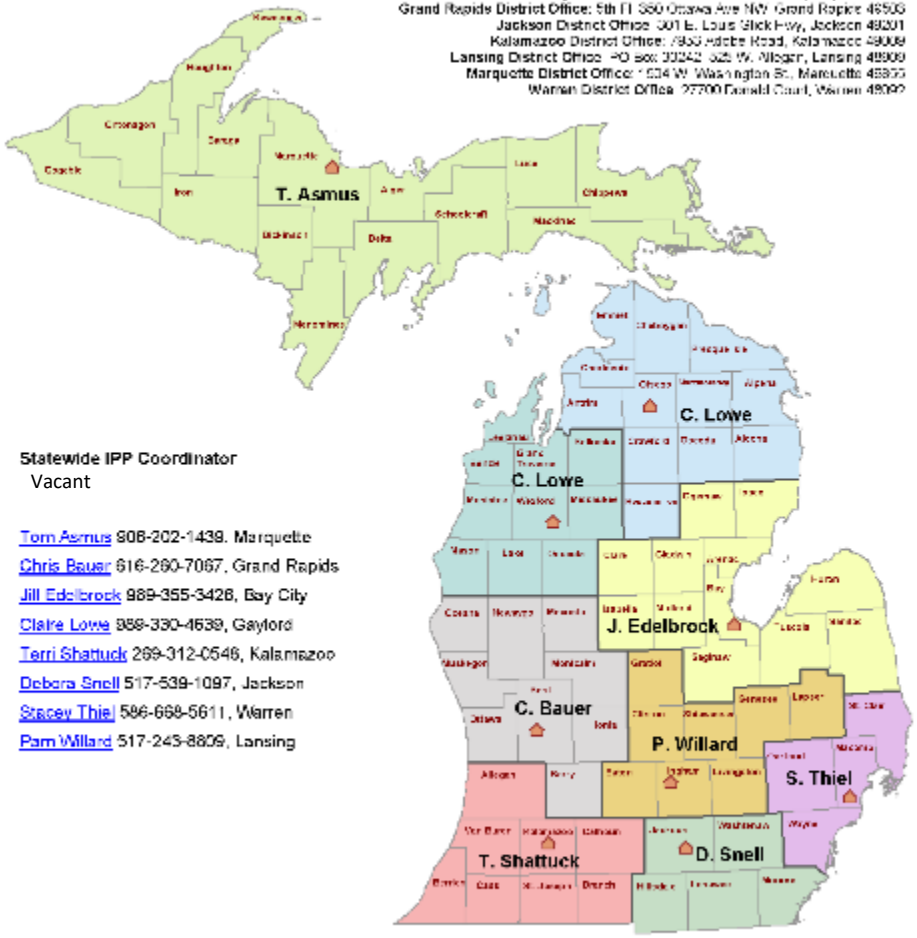
Industrial Pretreatment Program (IPP) Staff

Michigan.gov/IPP

Bay City District Office: 401 Ketchum Street, Suite B, Bay City 48706
Cadillac District Office: 120 W. Chapin St, Cadillac 49601
Gaylord District Office: 2100 Wes M-32, Gaylord 49735
Grand Rapids District Office: 5th Fl 350 Ottawa Ave NW, Grand Rapids 49503
Jackson District Office: 301 E. Louis Glick Hwy, Jackson 49201
Kalamazoo District Office: 7953 Adobe Road, Kalamazoo 49009
Lansing District Office: PO Box 30242, 525 W. Allegan, Lansing 48909
Marquette District Office: 1504 W. Washington St., Marquette 49855
Warren District Office: 27700 Donald Court, Warren 48092



Statewide IPP Coordinator
Vacant

Tom Asmus 906-202-1439, Marquette
Chris Bauer 616-260-7067, Grand Rapids
Jill Edelbrock 989-355-3426, Bay City
Claire Lowe 989-330-4639, Gaylord
Terri Shattuck 269-312-0546, Kalamazoo
Debora Snell 517-539-1097, Jackson
Stacey Thiel 586-668-5611, Warren
Pam Willard 517-243-8809, Lansing

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MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
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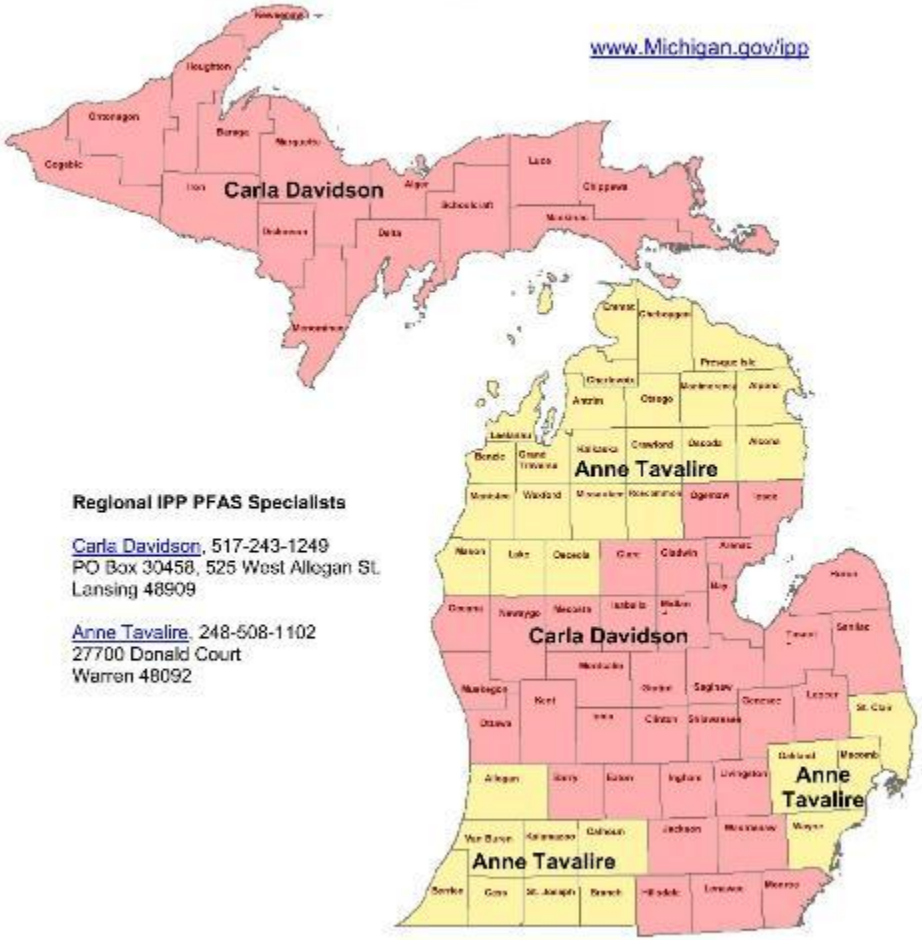
1/10/2024

Industrial Pretreatment Program (IPP) Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) Staff

www.Michigan.gov/ipp



Regional IPP PFAS Specialists

Carla Davidson, 517-243-1249
PO Box 30458, 525 West Allegan St.
Lansing 48909

Anne Tavalire, 248-508-1102
27700 Donald Court
Warren 48092

EGLE Water Resources Division
MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
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Questions?

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