



# IOWA DEPARTMENT OF NATURAL RESOURCES

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LEADING IOWANS IN CARING FOR OUR NATURAL RESOURCES

# Industrial Discharges and Treatment Agreements

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# Pretreatment

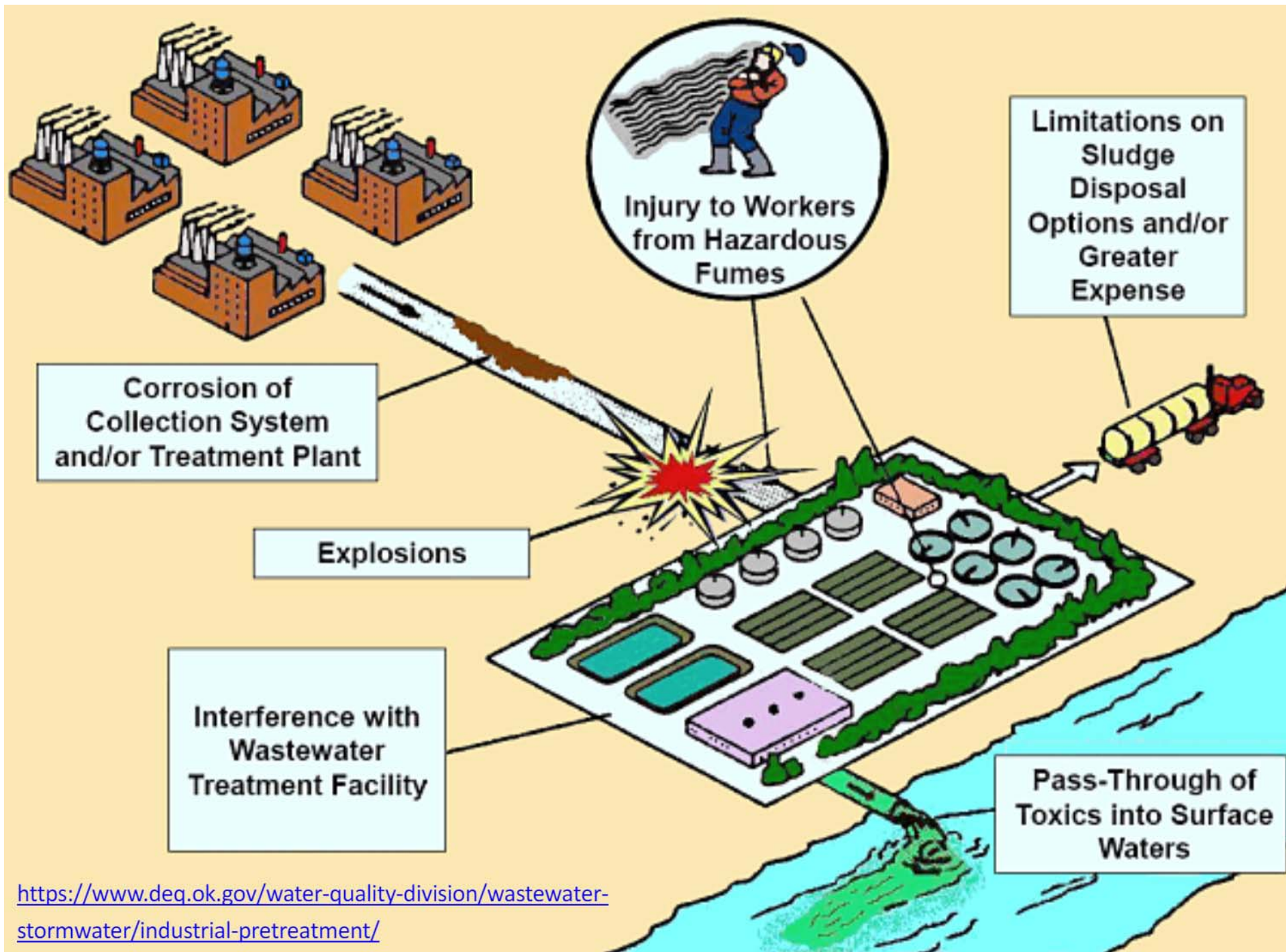
- Many industries discharge process wastewater to publicly-owned treatment works (POTWs)
  - Wastewater discharged to the city sanitary sewer
  - Wastewater hauled directly to the treatment facility
- *Pretreatment* is the management and regulation of industrial process wastewaters sent to POTWs

# Industrial Wastewater

- *Industrial Wastewater* – wastewater other than domestic/sanitary wastewater
  - Hand sinks, toilets, etc. are not usually considered sources of industrial wastewater
- *Process Wastewater* – industrial wastewater that is involved in a manufacturing step; basically anything that touches the product
  - Washing/rinsing of parts at a business manufacturing car parts
  - Clean-up water at a meat locker
  - Does NOT include boiler blowdown, non-contact cooling water, or domestic wastewater
- All users of POTWs have certain responsibilities; some sizes or types of process wastewater discharges have more regulation

# Why Have Pretreatment?

- Comply with Clean Water Act, state and federal regs
- Protect collection system and treatment plant
- Protect receiving streams
- Protect workers



<https://www.deq.ok.gov/water-quality-division/wastewater-stormwater/industrial-pretreatment/>

# What does an SIU look like? – It depends



Photos from [beacon.schneidercorp.com](https://beacon.schneidercorp.com)

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KAYLA LYON, DIRECTOR



# Wastewater User Types

- **User**
- Any person, business, etc., who discharges wastewater to the POTW (collection system and treatment facility)
  - **Industrial User (IU)**
  - An industry that discharges process wastewater to the POTW
    - **Significant Industrial User (SIU)**
    - An IU that meets one or more of the following criteria:
      - Discharges an average of 25,000 gallons/day or more of process wastewater
      - Discharges process wastewater flows or pollutant loads greater than 5% of the POTW's design flows or loads
      - Discharges process wastewater that is covered by EPA's categorical pretreatment standards
      - Is designated by the control authority (usually DNR)



## Flows and Loads

- Every POTW has approved design flows and approved design loads for some pollutants
  - These can be found in the Construction Permit, or on the Design Capacity page of the NPDES Permit
- With the 5% rule, a user that is significant in one city may not be significant in a larger city
- Example: Bob's Livestock Truck Wash discharges 200 lb/day BOD<sub>5</sub>
  - West Bend's POTW has a design of 182 lb/day – they wouldn't be able to accept the wastewater
  - Audubon's POTW has a design of 540 lb/day – they may be able to accept the wastewater, but it would be nearly 40% of their design
  - In Perry, the truck wash would be 5.7% of the design – still significant, but manageable
  - In Spencer, it's 3.6% of design – so not significant *by this criterion*

## Flows and Loads, cont.

- The 25,000 gallons/day (0.025 MGD) criterion applies regardless of the size of the POTW.
- If Billy's Business has a process flow of 30,000 gallons/day, it is an SIU anywhere
  - In Slater, where it's 10% of the ADW
  - In Emmetsburg, where it's 4.8% of the ADW
  - Or in Des Moines, where it's 0.06% of the ADW

# Categorical Industrial Users (CIUs)

- EPA created 50+ categories of industries for wastewater regulation
- 35 of the 50 categories have Pretreatment Standards (categorical limits) established
- IUs subject to the standards in one or more of the 35 categories are called “categorical” or “categorical industrial users (CIUs)”
- Size doesn’t matter – if the industry’s discharge fits the category description and the category has federal standards, *the industry is categorical*
- A zinc plating industry that discharges 200 gallons/day is a CIU, regardless of the size of the POTW

## CIUs – Special Notes

- An industry's discharge may fit into a category that doesn't have federal standards for industrial users
- Landfills and Meat Processors that discharge directly to a receiving stream have federal standards known as Effluent Limitation Guidelines
- There are no specific federal limits on industries discharging to POTWs
- **But wait!** These industries may be significant due to their size or other factors
- Bottom line: a landfill or meat processor is not a CIU
  - Landfills are SIUs because DNR believes they have potential to adversely affect the POTW
  - Meat processors may be SIUs due to their size
- There are also some special rules around categorical industries that never discharge more than 100 gallons/day

# Who Regulates Industrial Users?

- The setup varies a bit, depending on the POTW
- Some POTWs have approved pretreatment programs – these are generally larger cities/sanitary districts/reclamation authorities
  - We call these “pretreatment cities”, regardless of whether the owner is actually a city or some other public entity
  - 20 in the state
- POTWs with average design flows greater than 5 MGD *must* have programs. Other POTWs *may* have programs
- DNR has oversight of the pretreatment programs, and EPA has oversight of DNR

## Who Regulates Industrial Users? Part 2

- For the other 800 POTWs, DNR is the Control Authority
- A POTW still has responsibility for its IUs, but DNR is much more involved
- City/POTW decides what it can take and sets limits (subject to DNR and EPA requirements)
- SIUs must have a Treatment Agreement (TA) with the POTW
- TA must be submitted to DNR for review

# Some Rules Apply to Everyone

- General and Specific Prohibitions
- Apply to *all* users of POTWs – industries, commercial businesses, residences, governments, non-profits
- **General Prohibition:** a user of a POTW cannot discharge anything that will cause pass through or interference
  - *Pass through:* Pollutants that the POTW is not designed to treat that end up in the effluent, causing permit violations
  - *Interference:* Any pollutants that adversely affect the operation of the POTW and cause permit violations or prevent use or disposal of sewage sludge

## Some Rules Apply to Everyone, cont.

- Specific Prohibitions:
  - Pollutants causing fire or explosion hazards,
  - Solid or viscous substances that cause flow obstructions,
  - Excess heat that inhibits biological activity,
  - Petroleum/nonbiodegradable/mineral oil in amounts that will cause interference or pass through
  - Pollutants resulting in toxic gases, vapors, or fumes that cause acute health and safety problems
  - Pollutants that cause corrosive structural damage
  - Discharges with pH <5.0, or that cause raw waste to treatment works to be <6.0 or >9.0
  - Wastes in excess of design capacity of treatment works



# User Responsibilities - SIUs

- All SIUs:
  - Have a control mechanism
  - Meet limits/requirements of control mechanism
  - Monitor as required
  - Notify Control Authority of increases in discharge
- CIUs:
  - Comply with federal Pretreatment Standards
  - Submit Baseline Monitoring Report (BMR)
  - All requirements of SIUs

# Treatment Agreements - Overview

- Specific to Iowa (other states regulate slightly differently)
- Required of SIUs in non-pretreatment cities
- Agreement between city/POTW and SIU, subject to review by DNR
- Contain limits for the SIU
- **Do not contain:**
  - Fees/fines/surcharges (totally up to POTW)
    - POTWs and industries should have these items worked out and in writing, but we don't review them
  - Monitoring requirements (set by other rules)
- Form is available from <https://www.iowadnr.gov/Environmental-Protection/Water-Quality/NPDES-Wastewater-Permitting/NPDES-Operator-Information/Treatment-Agreements>

# Parameters in TAs

- Flow, pH
  - All SIUs have limits for these
  - Flow limits are set so that the POTW stays within its design
  - pH limits prevent corrosion in sewer, keep POTW in optimum range
- Compatible Wastes
  - Wastes that the POTW is designed to treat
  - BOD<sub>5</sub>, TSS, TKN – all must be within design capacity
  - May also include O&G, NH<sub>3</sub>-N, or Phosphorus
  - Not always included if not expected in significant amounts
- Incompatible Wastes
  - Everything else
  - Usually metals: cadmium, chromium, lead, etc.

# Categorical Limits

- Apply to categorical industries (e.g. metal finishers)
- Come from federal regulations
- Apply to incompatible wastes
- For example, metal finishers have an average copper limit of 2.07 mg/L

## Local Limits

- Applied to non-categorical and categorical SIUs
- Set by city (often in negotiation with SIU); reviewed by DNR
- Incompatible wastes
  - Must be at least as stringent as any applicable categorical limits
  - Usually calculated because POTW is trying to meet an effluent limit. Also may be used to prevent interference.
- Compatible wastes, flow
  - Calculated to keep POTW within its design
  - Ideally, <80% of design is allocated
    - If >80% is allocated, need to start planning ahead (POTW improvements, restrictions on new industries)
    - If >=100% is allocated, need to revisit limits

## Local Limit Examples

- Incompatible wastes
  - Categorical average copper for a metal finisher is 2.07 mg/L
  - Local limit has to be  $\leq 2.07$  mg/L
  - If POTW has an effluent limit of 0.03 mg/L, a couple of options are:
    - Set SIU's limits at 0.03 mg/L (easy)
    - Allocate SIU limits in proportion to their flow; if SIU flow is 1/10<sup>th</sup> of POTW, then they could have copper up to 0.3 mg/L
  - Can get very complicated with multiple SIUs, consideration of inhibition, biosolids disposal, etc.
- Compatible wastes
  - Say a POTW has a BOD<sub>5</sub> design of 1,250 lb/day (80% of design is 1,000)
  - Current average influent is 700 lb/day
  - POTW would ideally allocate 300 lb/day or less to its SIUs

## So How Does It All Work?

- A potential SIU is identified – maybe by self, maybe by city, maybe by DNR
- Gather information about IU – we have a survey form to get some basic info to help decide path
- Determine if they are significant – by any of the four criteria
- Write TA with local limits; include categorical limits if required
- POTW and SIU sign TA and submit to DNR
- DNR reviews and hopefully accepts
- POTW's NPDES permit is amended (if possible) to include the TA requirements

# Enforcement

- POTW should take the lead if enforcement is necessary
  - Letters, fines (if allowed by contract or ordinance)
- DNR will step in if necessary (if POTW isn't getting results or isn't acting)
  - EPA also has authority to step in
- Violation of the TA limits is a violation of the permit
- Not monitoring adequately is a violation of the permit
- Not enforcing the TA is a violation of the permit



## Other Documents - BMR

- BMR (Baseline Monitoring Report)
  - Required of all categorical users
  - Contents include identifying information, other environmental permits, a description of operations, flow measurement, and pollutant measurements
  - Very thorough – contents set by EPA
- TOMP (Toxic Organics Management Plan)
  - Optional categorical users that are regulated for total toxic organics (TTOs)
    - List of 111 organic chemicals such as benzene, naphthalene, bis (2-ethylhexyl) phthalate
  - Describes CIU's plan for ensuring that concentrated toxic organics do not enter the sewer
  - If approved, allows CIU to certify that TTOs have not been dumped, rather than test for them

# Metal Finishers

- Metal finishers are the most common CIUs in Iowa
- An industry is a metal finisher if it does one of six metal finishing operations: electroplating, electroless plating, anodizing, coating, chemical etching and milling, and printed circuit board manufacture
  - “Coating” can include phosphating, chromating, passivating, galvanizing, and other processes – look for acids used to clean or treat metals
  - Discharges from ancillary processes are also covered (e.g., rinsing parts after coating)
- Metal finishers are subject to regulations regardless of how much or little they discharge

# Questions?



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