

SUMMER 2024



Environmental Health & Safety From Experience

Does Your Facility Need a Wastewater Pretreatment System?

Wastewater pretreatment is the process of removing pollutants from a facility's wastewater to bring it from industrial levels of pollution (several thousand mg/L) closer to the more common residential levels of pollution (a couple hundred mg/L) that the municipal system is more prepared to treat. The municipal system then treats the wastewater to near single digit concentrations before discharging to surface waters.

At manufacturing plants, commonly employed wastewater pretreatment systems involve the following processes:

- **Equalization:** Smooths out the peaking and ebbing of flow and pollution content to allow more consistent treatment by downstream equipment.
- **pH adjustment.** Adds acid or alkaline chemicals to reduce the corrosivity (measured by pH) of the wastewater.
- **Pollution reduction.** Separates the pollutants from the water by using processes like size difference (screen, membrane), density difference (grease interceptor, dissolved air floatation), or as a food source (biological degradation).

In Hixson's experience, here are the top signs your facility may need a wastewater pretreatment system or need to upgrade the one you have:

1. **You don't have one and you are (or will be) discharging >25,000 gallons/day of process wastewater.** This flow threshold is common in local ordinances as defining the "Significant Industrial User" threshold. Above this flow, you will receive more scrutiny and are typically required to obtain a discharge permit. A permit usually comes with a limit on the concentration of pollutants.
2. **Your wastewater contains corrosive chemicals (pH at discharge is <5 or >11).** Sooner or later, the local authority is going to come to your door; and if it's not a local ordinance violation, it could be a bill for corroded city pipes downstream of your property.

Continued on next page. >

EXPERIENCE IN BRIEF

As a Best Management Practice (BMP), it is a good idea to properly use, recycle, and/or properly dispose of no longer needed ingredients and products in a timely manner. The longer they are left in storage, the more liability and expenses will be involved in the final disposal.



3. **Your wastewater contains fats, oils, and greases (FOGs), such as petroleum oils, vegetable oils, or animal fats, at a concentration >150 mg/L (can be lower in some jurisdictions.)** Like pH, over time FOG can affect downstream sewers (clogging and corrosion) and cause the municipality to start asking expensive questions.
4. **High wastewater pollutant levels (>1500 mg/L of BOD, COD, or TSS).** These elevated levels of wastewater pollutants may indicate the need for a wastewater pretreatment system. They could also indicate the need for an evaluation of your process for waste minimization efforts. A large portion of wastewater pollution is lost product. Doing your best to get that product out the door to consumers is more cost effective than treating it as a waste.
5. **Multiple wastewater discharge permit violations.** Hope is not a plan – it's time to invest in a pretreatment system! The current system (if one is in place) needs evaluation and possibly upgrades or expansion.
6. **Surcharges that exceed \$40,000/month.** This adds up to 1.4 million dollars over three years (a common ROI decision point). For that cost, there are several technologies that could reduce the surcharge by 75% or more and show a ROI within two to four years. If you have this kind of opportunity, installing pretreatment technology may be a wise financial decision.

For more information on wastewater pretreatment or to determine whether your current situation requires a new or upgraded system, contact Hixson.

RELATED CONTENT

[SARA 313/Toxic Release Inventory: Five Things You Need To Know](#)

[Six Common Storm Water Compliance Issues](#)



CONTACT US

Direct any comments or questions to:

Joe Weisgerber, P.E., CPEA

Manager, Environmental Engineering/Health & Safety

jweisgerber@hixson-inc.com

Phone: 513.241.1230

www.hixson-inc.com