

## Metropolitan Water Reclamation District of Greater Chicago

Monitoring and Research Department  
100 East Erie Street, Chicago, IL 60611

### Assessing Industrial Wastewater Discharges for Phosphorus

Phosphorus is a component of all living cells and is a natural part of the aquatic ecosystem that supports the growth of algae and aquatic plants; however, human activities can create excess phosphorus that enters the environment and may over-stimulate algal growth, contribute to Harmful Algal Blooms (HABs), and threaten the survival of fish and other aquatic life.

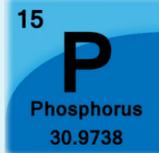
Excess phosphorus can come from industrial activities such as food processing, metal finishing, wastewater pretreatment, and cleaning and sanitation chemicals. Meat and dairy processing may contribute to high levels of phosphorus in wastewater because phosphorus is a component of all living cells, such as DNA and phospholipids. Metal finishing such as phosphating uses phosphoric acid to prepare a metal surface for improved paint adhesion. Industries may also use phosphoric acid to adjust the pH of their discharges or use cleaning or sanitation chemicals that contain phosphoric acid.

Excess phosphorus in industrial wastewater discharges can be reduced or eliminated by using pollution prevention (P2) or source control. Practices used to reduce phosphorus can also reduce overall User Charges. Dry cleaning, performed prior to wet cleaning, and reducing

overall water usage are two examples of practices that can reduce BOD, SS, and phosphorus in wastewater discharges. Users may also identify and assess the possibility of replacing any chemicals that contain phosphoric acid.

The Illinois Sustainable Technology Center's Technical Assistance Program offers free industrial site visits in which they deliver an initial recommendation report regarding sustainability. More information can be found at [Free Site Visits - Technical Assistance Program](#).

The MWRD must modify current wastewater treatment processes to remove excess phosphorus and meet decreasing phosphorus limits in their NPDES permits. The MWRD must also develop a surcharge to recover the costs associated with the removal of excess phosphorus. The MWRD is asking its Industrial User community to assess their wastewater discharges and apply best management practices to work together and prevent excess phosphorus from entering and threatening our water environment.



### MWRD Conducting PFAS Inspections of Industrial Users

Per- and Poly-Fluoroalkyl Substances (PFAS) are a group of fluorinated chemicals that have been used for decades in a wide variety of industrial applications. The acronym PFAS refers to the entire class of many thousands of fluorinated substances. At one time, these long-chain and short-chain carbon/fluorine compounds were celebrated for their simultaneous water-resistant and oil-resistant properties. Common household uses have included non-stick cookware, stain-resistant and wrinkle-resistant clothing, sticky notes, food packaging and many other applications. Industrial uses have included mist suppressants, coatings, barriers, surfactants, and Aqueous Film Forming Foam (AFFF) for extinguishing fires. PFAS compounds are sometimes referred to as "emerging" contaminants, not because they are new to manufacturing, but because scientific facts are still emerging about their impact on humans and the environment.

The United States Environmental Protection Agency has undertaken numerous activities to address PFAS, including the development of effluent limitation guidelines for certain industrial categories and the study of PFAS discharges from other categories, as outlined on its Effluent Guidelines Program website (<https://www.epa.gov/eg/current-effluent-guidelines-program-plan>). The MWRD anticipates that the Illinois Environmental Protection Agency will be requiring PFAS monitoring and pretreatment program activities in renewed NPDES permits as they are issued to wastewater treatment plants.

Given these upcoming regulatory requirements, the MWRD encourages our industrial user community to learn more about PFAS now, better understand your facility's potential impacts on the wastewater system and take steps to minimize PFAS discharges.

Environmental Specialists from the MWRD are performing facility inspections, asking industrial users (IUs) about current or historic PFAS use in their facilities to better understand PFAS discharges to our collection system. IUs can take the following steps to prepare for these questions ahead of time.

- Review Safety Data Sheets (SDS), looking for key words such as organic fluorosulfonate, fluorinated surfactant, or any chemicals with a name containing "fluoro." Many SDS don't reveal proprietary chemical formulas. Ask your chemical supplier for clarity.
- Prepare digital or paper copies of SDS for the inspector to review.

- Know where and how chemicals that may contain PFAS are used in your process and if they end up in your wastewater discharge.
- Consider your industrial activities and whether they are known for using PFAS. Refer to the chart on the following page of common uses of PFAS in various processes and investigate whether your business has in the past performed, or currently performs any of these activities.



#### What else can industrial users do?

Technology is being developed to prevent, remove, and remediate PFAS contamination in the environment and at the source. Industrial facilities are encouraged to take inventory of their current and past uses of PFAS-containing chemicals and understand what to look for.

- Ask your suppliers if they have PFAS-free product alternatives and can provide PFAS-free certification.
- Properly dispose of any PFAS-containing products that are no longer being used. Never dump them down the drain or in the garbage. Rather, contact a waste disposal contractor to assist with destruction of PFAS-containing products.
- If your processes use PFAS and discharge to the sewer is necessary, consider collecting a sample of the effluent to determine concentrations. There are treatment systems on the market that can be installed to greatly reduce the PFAS load to the MWRD WRP.
- If applicable, develop an in-house training program to educate your employees on the importance of managing PFAS from your industrial activities at the source.
- Stay up-to-date on PFAS -treatment options.

The MWRD has prepared a Fact Sheet on PFAS. To check it out, go [here](#).



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40 CFR Category	Industry	Common Uses of PFAS-containing Chemicals
413/433	Metal finishing and electroplating	Fume suppressant for chromium, other metals and plastics, Wetting agents Demister Defoamer Surfactant, Etch tanks, Anodizing Electroless nickel
414	Organic chemicals, plastics, synthetic fibers	Polymers Films, Solvents
469	Electrical and electronic components	Solvents, Cleaning/degreasing, Heat transfer fluids
410	Textile mills	Protective coatings, Repellents for stain, oil, water
Non-categorical or 445	Landfills	Acceptance of industrial wastes, General consumer items
425	Leather tanning and finishing	Chromium treatments, Repellents for stain, oil, water
463	Plastics molding and forming	Separation of molds from molded material, Foams, Etching
446	Paint formulating	Stain-resistance, Graffiti proof, Water repellency, Improvements to spread, flow, glossiness, bubbling, peeling Adhesives, sealants
430	Pulp and paperboard	Coatings for oil and moisture, Water repellency
Non-categorical and 449	Airport Deicing	AFFF fire-fighting foam
442	Transportation equipment cleaning	Residues from loads containing PFAS

CONTINUED COMPLIANCE REPORTS (RD-115) DUE DATES			
40 CFR	Industrial Category	First	Second
403	Non-Categorical	6/1	12/1
410	Textile Mills	3/2	9/2
413	Electroplating	4/27	10/27
414	Organic Chemicals, Plastics, Synthetic Fibers	5/5	11/5
415	Inorganic Chemicals Manufacturing	2/12	8/12
417	Soap and Detergent Manufacturing	6/10	12/10
419	Petroleum Refining	6/1	12/1
420	Iron and Steel Manufacturing	1/10	7/10
421	Nonferrous Metals Manufacturing	3/9	9/9
423	Steam Electric Power Generating	1/1	7/1
425	Leather Tanning and Finishing	5/25	11/25
430	Pulp, Paper, and Paperboard	1/1	7/1
433	Metal Finishing	2/15	8/15
437	Centralized Waste Treatment	6/22	12/22
439	Pharmaceutical	4/27	10/27
442	Transportation Equipment Cleaning	2/14	8/14
455	Pesticide Chemicals	4/4	10/4
463	Plastic Molding and Forming	1/30	7/30
464	Metal Molding and Casting	4/30	10/30
465	Coil Coating	6/1	12/1
466	Porcelain Enameling	5/25	11/25
467	Aluminum Forming	4/24	10/24
468	Copper Forming	2/15	8/15
469	Electrical and Electronic Components	1/14	7/14
471	Nonferrous Metals Forming + Metal Powders	2/23	8/23

### Noncompliance Enforcement (NCE) Charges Increased Effective 2023

NCE Charges reflect the cost of District activities related to noncompliance. These charges have not been updated since 2012 and required increasing based on a review of District costs. The review was based on costs of sampling, analysis, report review and other routine noncompliance related activities performed by the District. The new NCE Charges, which became effective January 1, 2023, are shown in the table below:

ENFORCEMENT LEVEL	CHARGE PER ENFORCEMENT ACTION
Notice of Noncompliance	\$2,500
Cease and Desist Order	\$5,000
Cease and Desist Order (Recurring)	\$10,000
Cease and Desist Order (Reporting Requirements)	\$1,000
Amendment to a Cease and Desist Order	\$500

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