

# PFAS IN METAL FINISHING

## WHAT ARE PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a large class of synthetic chemicals that are used in products and can provide chemical, heat, oil, or water resistance. Due to the effectiveness of PFAS, the chemicals are used in a variety of applications and have been used in manufacturing processes since the 1940s. PFAS are made to be durable and long-lasting and are often referred to as “forever chemicals.” This means they can exist for a long time in the human body and the natural environment. There is growing evidence that exposure to PFAS can impact human health, and some PFAS are linked to cancer. Due to the potential environmental and human health impacts, the federal government is considering and implementing legislation regarding the use, disposal, and regulation of these chemicals. CWS is preparing for the likelihood of increased regulation in the future.

## COMMON SECTOR SOURCES OF PFAS

- Hexavalent Chromium fume suppressant used during chrome plating
- Bath additive to impart a PTFE or other PFAS coating
- Plating solution surfactant
- Cleaning and surface finishing of metal components used in semiconductor processes

## POTENTIAL STRATEGIES TO REDUCE PFAS INTRODUCTION INTO WASTEWATER

- 1. Source identification:** Identify sources of PFAS. Reach out to chemical suppliers and engage with other industry representatives. Look out for chemical names that include the word “fluoro” as these chemicals may be PFAS. Look out for chemicals that have the characteristics of PFAS chemicals including chemical, heat, oil, or water resistance.

Perfluorooctanesulfonic acid (PFOS)



## ABOUT CLEAN WATER SERVICES

Clean Water Services (CWS) is a water resources management utility that combines science and nature to clean water and return it to the Tualatin River so it can be used again. We work in partnership with others to safeguard the river’s health and vitality, ensure the economic success of our region, and protect public health for more than 600,000 residents and businesses in urban Washington County, Oregon. Since 2019, CWS has collected samples from its water resource recovery facilities and across the sewershed in residential, commercial, and industrial locations, investigating sources of PFAS. CWS is actively surveying and sampling the sewershed and watershed to better understand impacts to public and environmental health.

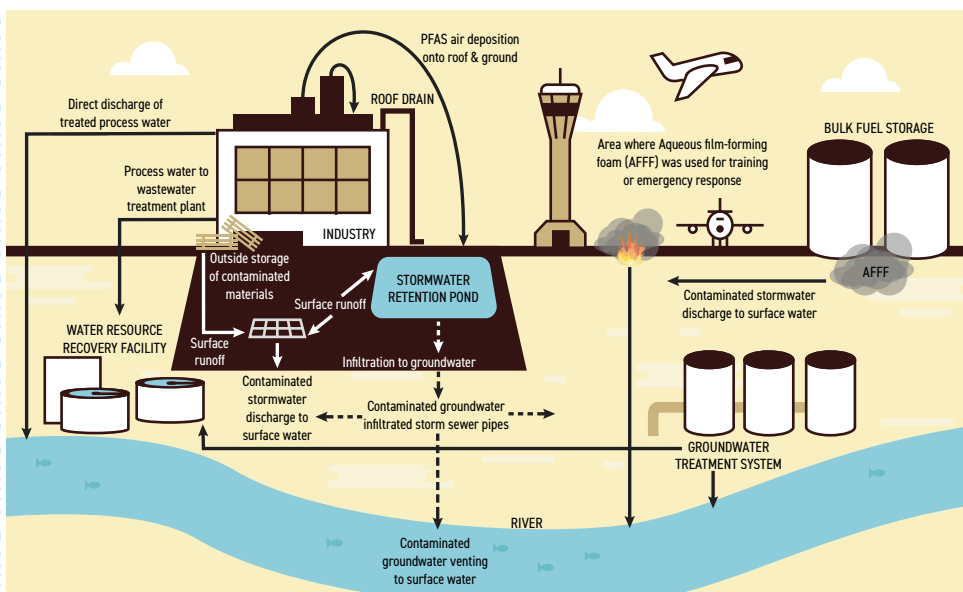
2. **Product substitution:** Evaluate if a PFAS-free alternative is available, especially if the product goes down the drain or is stored outdoors. By switching to PFAS-free products sooner, your businesses will be better prepared for future PFAS regulations, and you will be contributing to the long-term health of local rivers and streams.
3. **Source reduction:** Where feasible, stop or reduce the purchasing and use of PFAS-containing materials and products onsite. Clean or replace piping, tubing, tanks, or pits. Historic use of PFAS may impact the structural equipment your facility uses. Capture wastewater that may contain PFAS dispose of it properly.
4. **Source separation:** Keep process wastewater that contains PFAS separate from other wastestreams. Find a different disposal method for the wastestreams that could contain PFAS. This may mean hauling the concentrated PFAS fraction offsite. Early efforts to separate wastestreams may help to reduce the overall cost of hauling or treatment.
5. **Treatment:** Although costly, consider PFAS treatment systems. Possible treatment technologies include foam fractionation, granular activated carbon, reverse osmosis, or other strategies as they relate to your facility

**Benefits to early action** include preparing for likely regulations, such as wastewater regulations and products bans, by changing your practices and products now.

## HOW SOURCES OF PFAS MAY IMPACT STORMWATER

Stormwater can carry pollutants from homes and businesses into local streams and rivers. Don't store materials that could contain PFAS outdoors. Don't dispose of water that could contain PFAS down drains or into the local environment. Indoor usage of PFAS containing materials or products may impact stormwater quality by air deposition from air abatement units.

Learn more and keep up-to-date on everything PFAS at [cleanwaterservices.org/PFASMetal](https://cleanwaterservices.org/PFASMetal)



## POTENTIAL STRATEGIES TO REDUCE PFAS INTRODUCTION INTO STORMWATER

1. **Storage solutions:** Moving PFAS-containing materials, products, wastes, or equipment under a storm-resistant shelter or indoors. Solutions may include covering dumpsters, unused equipment, containers or drums.
2. **Spill prevention measures:** Implement and routinely review spill control measures to contain and properly dispose of spills containing PFAS. Implement controls such as covers, berms, and routine inspections of areas with potential for PFAS spills such as areas where material, products or wastes are stored or transferred. Examples of practices that may result in spills or leaks include liquid or material transferring or dispensing activities such as unloading/loading processes, equipment fueling, and manual or forklift transport or transfer of materials, products, or wastes. Solutions may include avoiding material transferring during rain events, conducting all transferring operations under cover or indoors, and inspecting all containers, barrels, seals, valves and piping for leaks.
3. **Source reduction:** Removal of contaminated materials, products, surfaces, wastes, or equipment. Reduce or eliminate subsequent purchasing and use of PFAS-containing materials and products onsite as feasible.

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