Industrial Stormwater

Per- and polyfluoroalkyl substances (PFAS) Area(s) of Concern (AOC)

PFAS are a group of more than 14,000 human-made chemicals that do not break down over time. Their extreme resistance to degradation in the environment and resistance to destruction in wastewater treatment plants, landfills, and incinerators has led to the nickname “forever chemicals.”

Many PFAS are known to pose health risks to humans. Several specific PFAS have been linked to increased risks for cancer, liver disease, immune system disfunction, and other negative health impacts. PFAS can also negatively impact aquatic life and wildlife.

The Minnesota Pollution Control Agency’s (MPCA) Industrial Stormwater (ISW) Program requires all ISW facilities with a primary Standard Industrial Classification (SIC) Code associated with PFAS to conduct PFAS monitoring. The 2025 ISW National Pollutant Discharge Elimination System and State Disposal System (NPDES/SDS) General Permit (Permit) lists the applicable SIC Codes in its Appendix D. This document provides guidance on how to identify potential area(s) of concern (AOC) for PFAS at a facility.

What is an AOC?

The Permit defines AOC as all “area(s) of the facility where the Permittee, makes, uses, stores, or processes PFAS containing materials and/or where vents or exhausts are located on buildings that make, use, store, or process PFAS, or areas of the facility where PFAS would become exposed, if potentially present at the facility due to industrial activities.”

Identifying AOC location(s)

An ISW permitted facility must have at least one identifiable AOC location where the Permittee will collect a minimum of four PFAS stormwater samples. Some facilities will have more than one AOC location. Permittees are required to evaluate their facilities for all possible AOC locations and include them in their facility’s PFAS Monitoring Plan. AOC locations shall be found on the outside of a facility and associated with an internal or external industrial activity potentially associated with PFAS. Examples of AOC locations include, but aren’t limited to:

- Rooftops or sides of buildings where vents or exhausts may deposit PFAS from an area of a building where PFAS or PFAS-containing products have historically been or currently are manufactured, processed, stored, and/or disposed of in an industrial activity.
- Downspouts draining rooftops which include vented portions of a building.
- Doors and/or windows, including loading docks and garage doors, where PFAS-containing materials have the potential of discharging outside of the building and into stormwater.
- Areas where aircraft equipment is stored and/or maintenance is conducted.
- Areas where Class B firefighting foams, such Aqueous Film Forming Foam (AFFF), are currently used or have historically been used to extinguish fires, for firefighting training, and in testing of a facility’s fire suppression system.

- Around piles of shredder fluff or a collection of waste materials generated after the storage, shredding, shearing, compacting, and/or crushing of vehicles, appliances, and other materials known to contain PFAS.
- Within items containing hydraulic fluid shown to provide anti-rust, anti-corrosion, and anti-foaming properties. Examples consist of, but are not limited to:
    - Pneumatic tools, construction equipment, and winches
- Around collections of known PFAS-containing products such as, but not limited to:
    - Stain resistant carpets, upholstery, and other fabrics
    - Paints, varnishes, and sealants
    - Refrigerators, heat pumps, and air conditioners
    - Products wrapped in industrial plastic
    - Chemicals used in the process of platemaking, commercial printing, and related activities
    - Pre-production fluorinated polymer resins, plastic production mold release agents, fluorinated waxes, and fluoropolymer-lined products
    - Chemicals used in the process of leather tanning, weathering, and finishing
    - Automotive items such as:
        - Waxes
        - Pigment dispersions along with coatings used on break lines and fuel lines
        - Windshields, trim, and headlights

Many facilities have previously established benchmark monitoring locations (BMLs), which were identified as stormwater monitoring locations. These BMLs may also be selected as AOCs if they meet the requirements of an AOC. Not all BMLs will be a sufficient location for an AOC and the AOC criteria should be reviewed when determining the appropriateness of an AOC/BML combination.

Potential presence of PFAS

There are several ways to identify the potential presence of PFAS at a facility. The following list includes, but does not limit, records that may be used to identify sources of PFAS at your site.

- Safety Data Sheets (SDS):
    - Text fragments such as “perfluoro,” “fluoro,” or “fluorosurfactant” may identify the use of PFAS in a particular product.
    - Perfluorooctane sulfonic acid (PFOS)
    - 6:2 fluorotelomer sulfonates (FTS), 6:2 Fluorotelomer sulfonic acid, 6:2 FTS
    - 6:4 FTS
    - F-53B (11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid [11Cl-PF3OUdS or F-53B Minor], 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS or F-53B Major)]
    - Note: Exclusion of PFAS in a SDS does not necessarily mean the equipment or supply is not contaminated with PFAS. PFAS could have been used not as a component of the equipment or supply, but as a material used in the manufacturing process itself (e.g., in mist suppressant or mold coating). This can result in the manufactured equipment or supply containing PFAS.
- Acquisition and procurement records
- Process engineering records
- Supplier provided chemical composition sheets

More information

For more information about industrial stormwater visit the MPCA's industrial stormwater webpage at https://www.pca.state.mn.us/business-with-us/industrial-stormwater. The MPCA's ISW Program may be contacted at iswprogram.pca@state.mn.us and by contacting the stormwater hotline: 651-757-2119 or 800-657-3804 (non-metro only).