PFAS and Industrial Stormwater

2025 Arrowhead Environmental Conference

Aisha Balogh

September 30, 2025

BARR

Agenda

1. MN General Permit overview
2. Practical source identification/AOCs
3. Permit-required sampling
4. PFAS Source and Exposure Reduction Plan
5. Other regulatory developments
6. Risk reduction strategies

2025 General Permit and PFAS

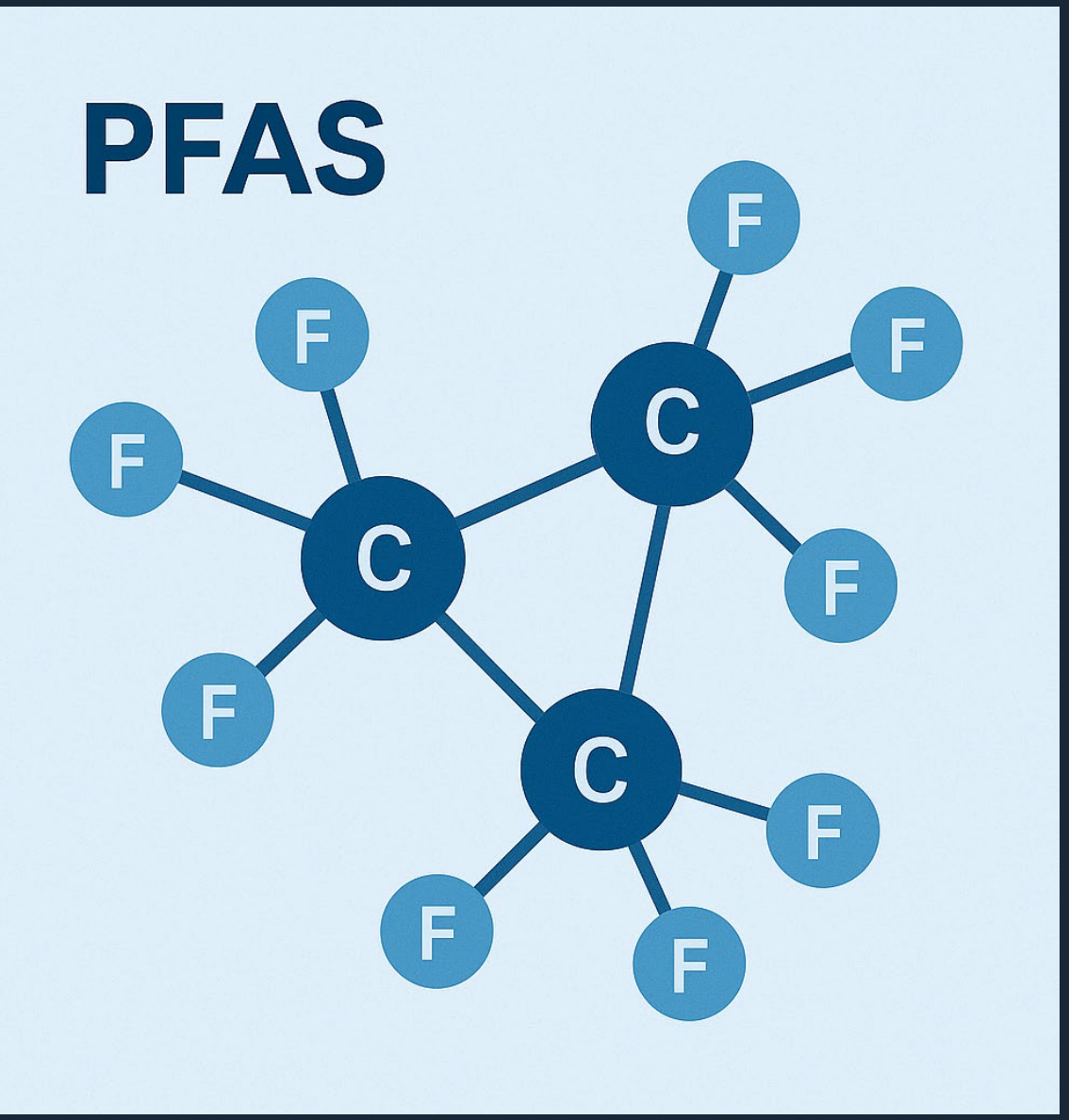
BARR

Permit Overview – Scope of General Permit

Application not available

- **Scope:** Appli… activities statew… 3/31/2030
- …educe pollutant levels in stormwater discharges and ensure compliance with the Clean Water Act and Minnesota statutes
- **In-Scope:** sites with a listed primary SIC code or covered activity (even if all stormwater is captured in a pond)
- **Out-of-scope:** non-stormwater discharges (unless otherwise authorized)

Sector	Sector Description
A	Timber Products
B	Paper and Allied Products Manufacturing
C	Chemical and Allied Products Manufacturing
D	Asphalt Paving and Roofing Materials and Lubricant Manufacturing
E	Glass, Clay, Cement, Concrete, and Gypsum Products
F	Primary Metals
G	Metal Mining (Ore Mining and Dressing)
H	Coal Mines and Coal Mining Related Facilities
I	Oil and Gas Extraction and Refining
J	Mineral Mining and Dressing
K	Hazardous Waste Treatment, Storage, or Disposal Facilities
L	Landfills and Land Application Sites
M	Automobile Salvage Yards
N	Scrap Recycling and Waste Recycling Facilities
O	Steam Electric Generating Facilities
P	Land Transportation and Warehousing
Q	Water Transportation
R	Ship and Boat Building and Repair Yards
S	Air Transportation
T	Treatment Works
U	Food and Kindred Products
V	Textile Mills, Apparel, and Other Fabric Products Manufacturing
W	Furniture and Fixtures
X	Printing and Publishing
Y	Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries
Z	Leather Tanning and Finishing
AA	Fabricated Metal Products
AB	Transportation Equipment and Industrial or Commercial Machinery
AC	Electronic and Electrical Equipment and Components, Photographic and Optical Goods



New PFAS Requirements

New PFAS Requirements – Primary SIC Codes in Appendix D

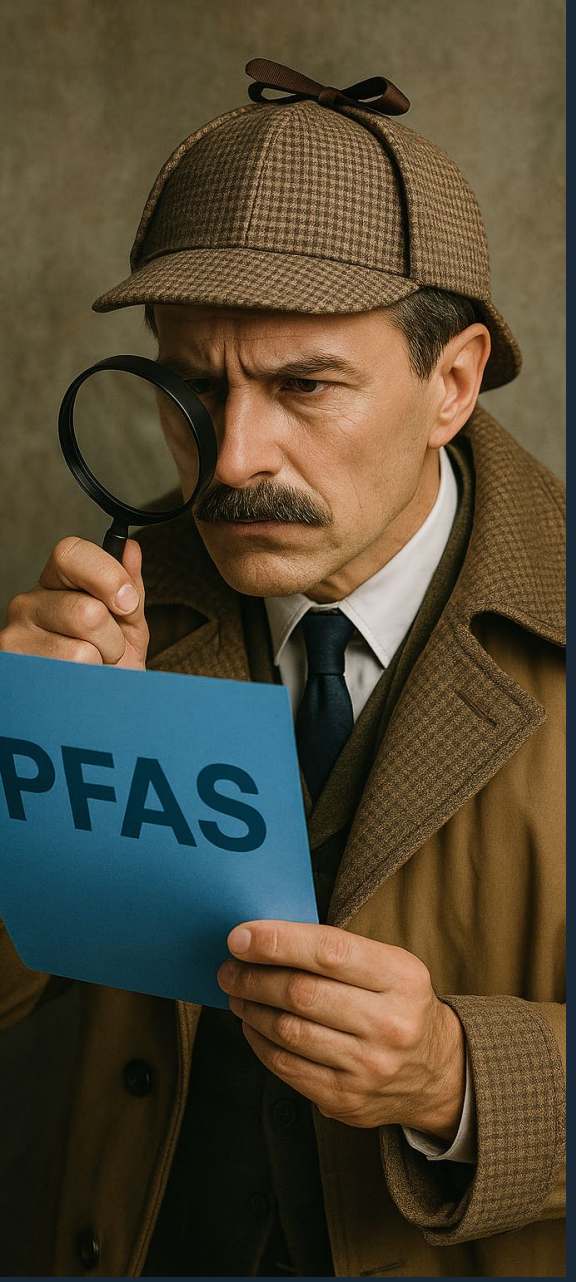
Sector	SIC Code	SIC – Nar. Act. Description *
B	2621	Paper Mills
B	2656	Sanitary Food Containers, Except Folding
B	2671	Packaging Paper and Plastics Film, Coated and Laminated
B	2672	Paper; Coated and Laminated, Nec
B	2673	Bags: Plastic, Laminated, and Coated
C	2821	"Fluoro-polymer resins manufacturing (Plastics Materials, Synthetic Resins, and Nonvulcanizable Elastomers)"/Plastics Materials and Resins
C	2824	Manmade Organic Fibers, Except Cellulosic
C	2842	Specialty Cleaning, Polishing, and Sanitation Preparations
C	2844	Perfumes, Cosmetics, and Other Toilet Preparations
C	2851	Paints, Varnishes, Lacquers, Enamels, and Allied Products
C	2899	Chemicals and Chemical Preparations, Not Elsewhere Classified
D	2952	Asphalt Felts and Coatings
D	2992	Lubricating Oils and Greases
F	3399	Primary Metal Products, Not Elsewhere Classified
I	2911	Petroleum Refining
N	5093	Scrap and Waste Materials
S	4581	Airports, Flying Fields, and Services
V	2221	Broadwoven Fabric Mills, Manmade Fiber and Silk
V	2262	Finishers of Broadwoven Fabrics of Manmade Fiber and Silk
V	2273	Carpets and Rugs
V	2295	Coated Fabrics, Not Rubberized
V	2297	Non-woven Fabrics
V	2299	Textile goods, Not Elsewhere Classified
V	2385	Waterproof Outerwear
V	3131	Boot and Shoe Cut Stock and Findings
V	3161	Luggage
V	3172	Personal Leather Goods, Nec
V	3199	Leather Goods, Nec
X	2752	Commercial Printing, Lithographic
X	2796	Platemaking and Related Services
Y	3069	Fabricated Rubber Products, Nec
Y	3081	Unsupported Plastics Film and Sheet
Y	3082	Unsupported Plastics Profile Shapes
Y	3083	Laminated Plastics Plate, Sheet, and Profile Shapes
Z	3111	Leather Tanning and Finishing
AA	3471	Electroplating, Plating, Polishing, Anodizing, and Coloring
AA	3497	Metal Foil and Leaf
AB	3567	Industrial Furnaces and Ovens
AB	3589	Service Industry Machinery, Not Elsewhere Classified
AB	3599	Industrial and Commercial Machinery and Equipment, Not
AC	3674	Semiconductors and Related Devices
AC	3695	"Magnetic Tape Manufacturing Operations"/Magnetic and Optical
AC	3841	Surgical and Medical Instruments and Apparatus
AC	3861	Photographic Equipment and Supplies

SIC questions? See the MPCA factsheet ↗

Identify PFAS Areas of Concern

"Area of Concern" means the area(s) of the facility exposed to stormwater 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 containing materials, or areas of the facility where PFAS would otherwise become exposed to stormwater, if present at the facility due to its industrial activities.

"An ISW permitted facility must have at least one identifiable AOC location".



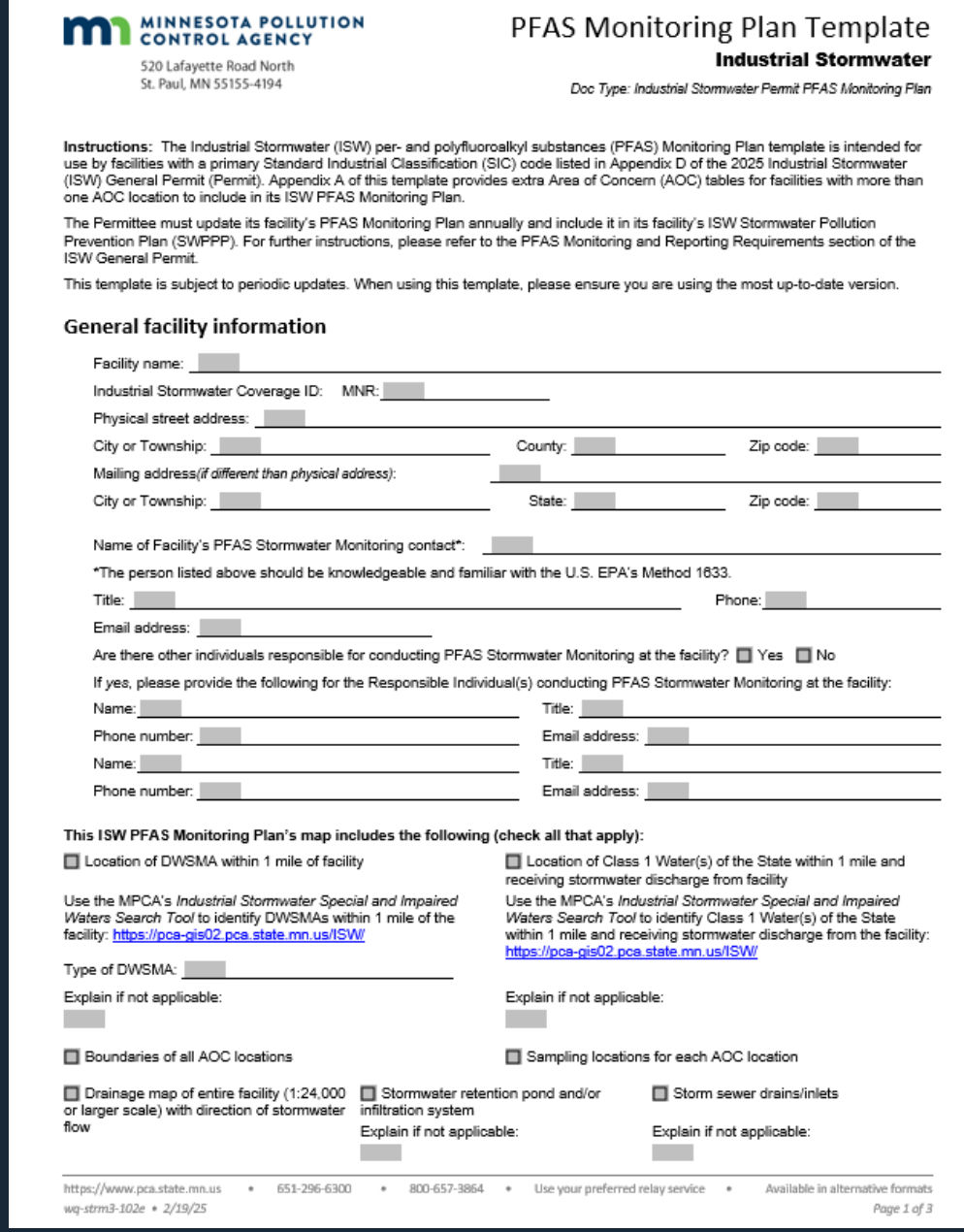
Practical Source Identification/ Locating PFAS Areas of Concern

- Review current and historical SDS – “fluoro” and other keywords
- Review historical activities that may have been PFAS-containing (adhesives, antifogging, surfactants, emulsifiers, etching, heat transfer fluids, industrial cleaning, fluorination process, coal, etc.)
- Fire-fighting training, fire suppression system testing, or historical fires
- Past spill locations
- Scrap metal storage
- Dump locations
- PFAS desktop screening tool

PFAS Monitoring Plan

ONLY IF REQUIRED BY PERMIT

- Develop a PFAS Stormwater Monitoring Plan
  - Review and update annually
  - Describe AOC monitoring location(s) and significant materials within the AOC
  - Develop a facility map
  - Include in the facility's SWPPP
  - Make available to the MPCA within 72 hours of a request for review
  - PFAS Monitoring Plan Template (.docx)



MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

PFAS Monitoring Plan Template
Industrial Stormwater
Doc Type: Industrial Stormwater Permit PFAS Monitoring Plan

Instructions: The Industrial Stormwater (ISW) per- and polyfluoroalkyl substances (PFAS) Monitoring Plan template is intended for use by facilities with a primary Standard Industrial Classification (SIC) code listed in Appendix D of the 2025 Industrial Stormwater (ISW) General Permit (Permit). Appendix A of this template provides extra Area of Concern (AOC) tables for facilities with more than one AOC location to include in its ISW PFAS Monitoring Plan.

The Permittee must update its facility's PFAS Monitoring Plan annually and include it in its facility's ISW Stormwater Pollution Prevention Plan (SWPPP). For further instructions, please refer to the PFAS Monitoring and Reporting Requirements section of the ISW General Permit.

This template is subject to periodic updates. When using this template, please ensure you are using the most up-to-date version.

General facility information

Facility name:
Industrial Stormwater Coverage ID: MNR:
Physical street address:
City or Township: County: Zip code:
Mailing address*(if different than physical address)*:
City or Township: State: Zip code:

Name of Facility's PFAS Stormwater Monitoring contact*:
*The person listed above should be knowledgeable and familiar with the U.S. EPA's Method 1633.
Title: Phone:
Email address:
Are there other individuals responsible for conducting PFAS Stormwater Monitoring at the facility? ☐ Yes ☐ No
If *yes*, please provide the following for the Responsible Individual(s) conducting PFAS Stormwater Monitoring at the facility:
Name: Title:
Phone number: Email address:
Name: Title:
Phone number: Email address:

This ISW PFAS Monitoring Plan's map includes the following (check all that apply):

☐ Location of DWSMA within 1 mile of facility
Use the MPCA's *Industrial Stormwater Special and Impaired Waters Search Tool* to identify DWSMAs within 1 mile of the facility: https://pca-gis02.pca.state.mn.us/ISW/
Type of DWSMA:
Explain if not applicable:

☐ Location of Class 1 Water(s) of the State within 1 mile and receiving stormwater discharge from facility
Use the MPCA's *Industrial Stormwater Special and Impaired Waters Search Tool* to identify Class 1 Water(s) of the State within 1 mile and receiving stormwater discharge from the facility: https://pca-gis02.pca.state.mn.us/ISW/
Explain if not applicable:

☐ Boundaries of all AOC locations

☐ Sampling locations for each AOC location

☐ Drainage map of entire facility (1:24,000 or larger scale) with direction of stormwater flow

☐ Stormwater retention pond and/or infiltration system
Explain if not applicable:

☐ Storm sewer drains/inlets
Explain if not applicable:

https://www.pca.state.mn.us • 651-296-6300 • 800-657-3864 • Use your preferred relay service • Available in alternative formats
wq-strm3-102e • 2/19/25 *Page 1 of 3*

PFAS Sampling Requirements

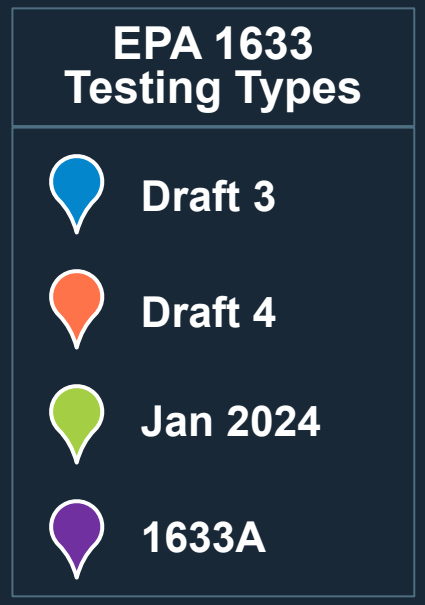
- Begin the first full calendar quarter following per coverage
- Collect samples for at least four quarters
  - Average results if sampled more than once per quarter
- Collect from a measurable runoff event within 30 min of discharge (at least three days from the last measurable runoff event).
- Snow Sampling
  - >3 “ of snow over >3 weeks
  - Use MPCA's protocols in PFAS Snow Sampling Guidance document
- Collected by a "responsible individual"

PFAS Contamination - Sampling Considerations

Items that may cause sample contamination	
Teflon ® , Viton ® or fluoropolymer containing materials	New clothing or water resistant, waterproof, or stain treated clothing, clothing containing Gore-Tex ®. Avoid any sort of synthetic "performance" fabrics
Storage of samples in containers made of LDPE materials	Clothing laundered using fabric softener
Teflon ® tubing	Boots containing Gore-Tex ® Leather boots and gloves may require pre-screening
Waterproof field books	Tyvek ® (coated variety)
Plastic clipboards, binders, or spiral hard cover notebooks	No cosmetics, moisturizers, hand cream, or other related products as part of personal cleaning/showering routine on the morning of sampling
Post-It ® Notes	LDPE or glass containers
Chemical (blue or black) ice packs	Teflon ® -lined caps
Waterproof or water-resistant rain gear	Decon 90
All food and drink, with exceptions as noted for acceptable items	Water from an on-site well

Very limited local support for testing

MDH/MPCA Certified Laboratories by versions of **EPA 1633**



PFAS Thresholds

Class 1 Waters of the State defined in Minnesota Session Law – 2023, Chapter 60, Sec. 33.

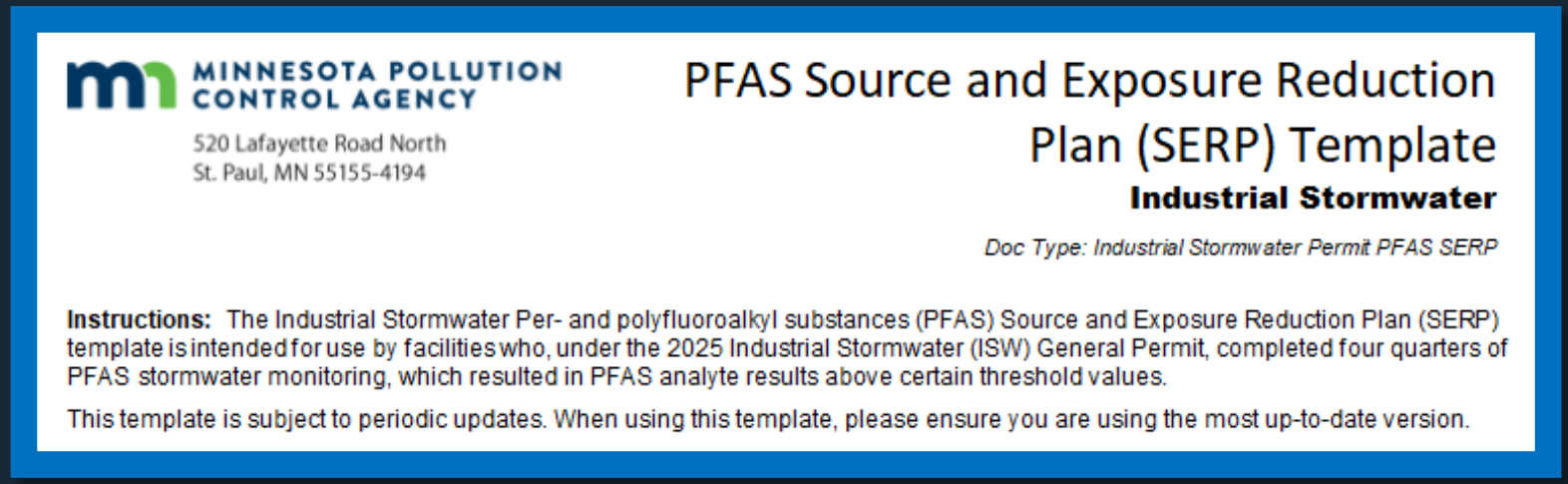
Industrial stormwater special and impaired waters search tool ↗

Compound	General Threshold	Within one mile of drinking water supply management area and/or a Class 1 water
PFOA	10 ng/L	4 ng/L
PFOS	10 ng/L	4 ng/L
PFHxS	n/a	10 ng/L
PFNA	n/a	10 ng/L
HFPO-DA (GenX)	n/a	10 ng/L

An exceedance of threshold is not a violation, but triggers developing a PFAS Source and Exposure Reduction Plan (SERP)

PFAS Source and Exposure Reduction Plan

- PFAS Source and Exposure Reduction Plan (SERP)
  - Complete and implement within 180 days of exceeding sampling quarter
  - Use current MPCA template
    - General facility information
    - PFAS identification
    - PFAS Stormwater monitoring results
    - Facility's PFAS-reducing and eliminating efforts
  - Review and update annually
  - Submit with annual report



MINNESOTA POLLUTION CONTROL AGENCY

520 Lafayette Road North
St. Paul, MN 55155-4194

PFAS Source and Exposure Reduction Plan (SERP) Template

Industrial Stormwater

Doc Type: Industrial Stormwater Permit PFAS SERP

Instructions: The Industrial Stormwater Per- and polyfluoroalkyl substances (PFAS) Source and Exposure Reduction Plan (SERP) template is intended for use by facilities who, under the 2025 Industrial Stormwater (ISW) General Permit, completed four quarters of PFAS stormwater monitoring, which resulted in PFAS analyte results above certain threshold values.

This template is subject to periodic updates. When using this template, please ensure you are using the most up-to-date version.

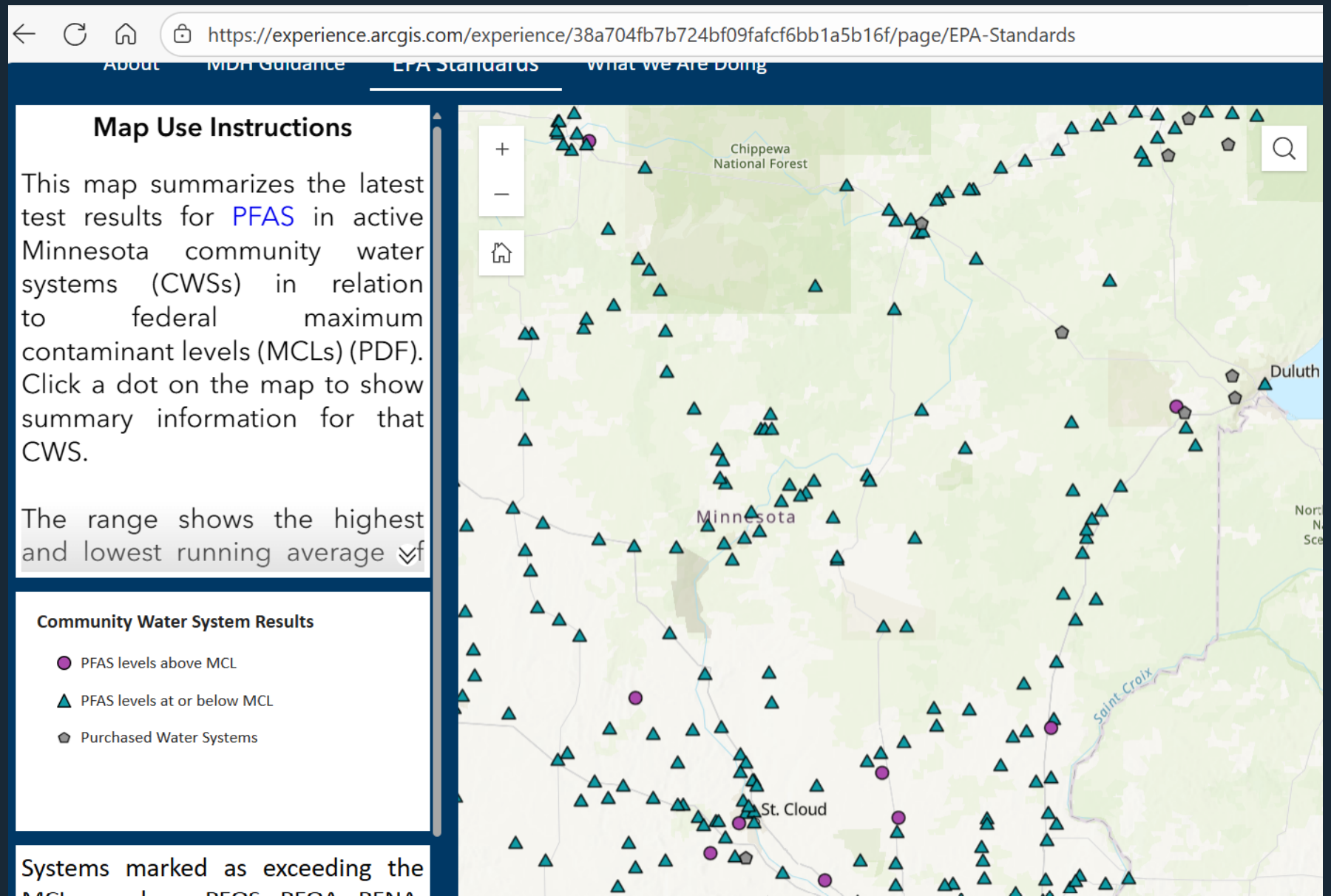
What does the future hold?

- Permit does not require ongoing sampling after the first four quarters
- Unknown stipulations: treatment, expanded testing, site-specific permit, enforcement, remediation requirements
- Higher risk:
  - Discharges to drinking water sources (groundwater or surface water)
  - Discharges to sources with PFAS impairments
  - Discharges to other vulnerable or special waters
  - Sites with multiple discharges
  - Targeted industries (metal finishing, textiles, coatings, plastics, airports, chemical manufacturing, rubber/plastics, electronics, cosmetics, etc.)
  - New or expanding facilities
  - High levels of PFAS in stormwater

Other Regulatory Drivers

PFAS in Drinking Water

[Interactive Dashboard for PFAS Testing in Drinking Water]



Regulatory Snapshot

Federal

- Drinking water MCLs (2024)
- NPDES disclosure requirements
- CERCLA / Superfund (2024)
- TSCA
  - Section 8(a)(7) PFAS reporting rule (2026-2027)
  - SNURs for long-chain PFAS (2020)
- TRI
- ELGs (in progress)
- RCRA (?)

Minnesota

- Amara's Law – PFAS in products (2024-2032)
- Drinking water MCLs and HBVs (2024)
- Fish consumption advisories (ongoing)
- Site-specific PFAS water-quality criteria
- Statewide PFAS Monitoring Plan
- Biosolids strategy (in progress)
- PFAS Remediation Guidance (2024)
- Air (2027?)

Reducing Risk

BARR

Reducing Risk

1. Know your discharge path
2. Implement a system for evaluating purchase records and ask suppliers for PFAS content – build an inventory
3. Simple source reduction efforts (containment, covering storm drains, relocating chemicals, frequent inspections, check valves)
4. Replace AFFF
5. Develop AFFF or PFAS management plan and spill response procedures
   - Processes for identifying volumes which may exceed reportable quantities and summarizing reporting requirements
   - Methods for estimating volumes of potential PFAS releases to air/water/ground
   - Equipment decontamination methods
   - Spent material disposal options

Q & A

How Can Barr Help?

BARR

Barr Can Help

- Understanding how these requirements apply to your facility
- Permit application through e-services
- SWPPP development, review, or update
- Assistance with sampling, planning for sampling, or providing training
- Interpretation of sample results
- Tracking of regulatory or PFAS treatment developments
- Identifying PFAS areas of concern (AOCs)
- Developing PFAS Stormwater Monitoring Plans
- PFAS source reduction recommendations
- Stormwater management redesign to reduce PFAS exposure
- PFAS stormwater treatment design
- Risk evaluation and mitigation plans

Thank you

Aisha Balogh

abalogh@barr.com

Phone: 218-259-4672