



PFAS Case Study: Minnesota

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June 14, 2018

No matter who or where you are in Minnesota



MDH Environmental Health Division works behind the scenes to create conditions that support the health of all Minnesotans.



Air



Homes & Lodging



Chemicals & Hazards



Water



Licenses & Registrations



Radiation



Food



Recreation



Communities



Weather & Climate

The MDH Mission - Protecting, maintaining, and improving the health of all Minnesotans.

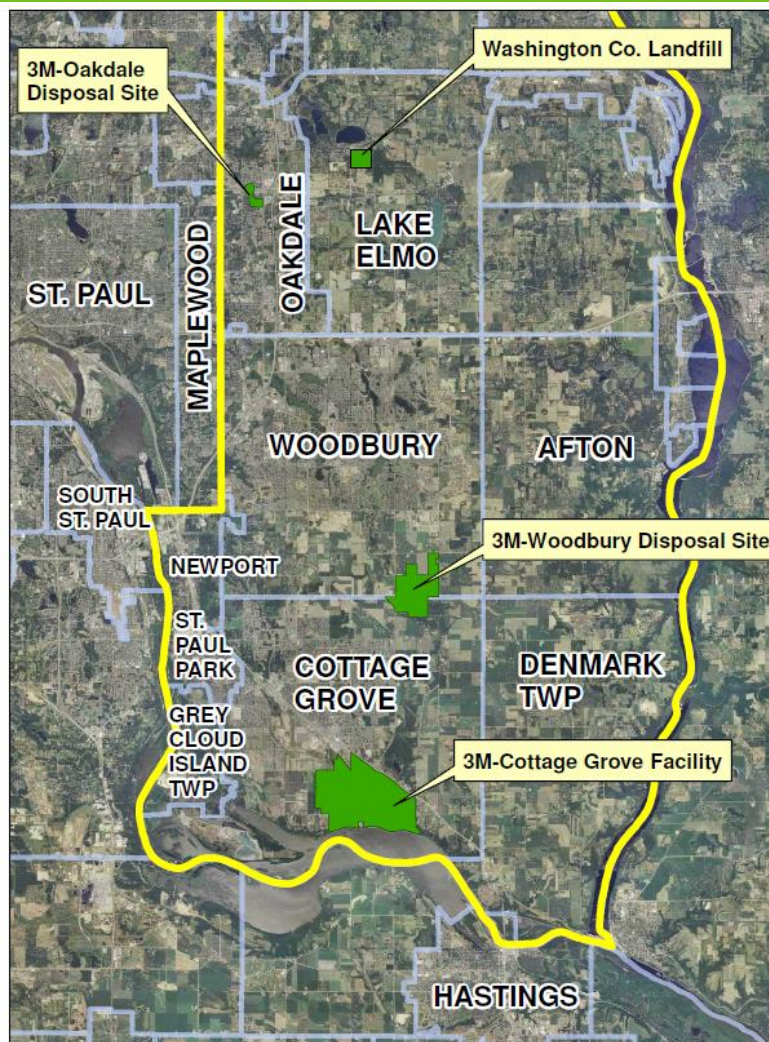
PFAS in Washington County, Minnesota

PFAS manufactured in Cottage Grove, MN since the 1940s

PFAS wastes disposed of at plant and in three major off-site disposal areas

State has been investigating since 2002

Consent agreement and court settlement with 3M has funded PFAS assessment and response



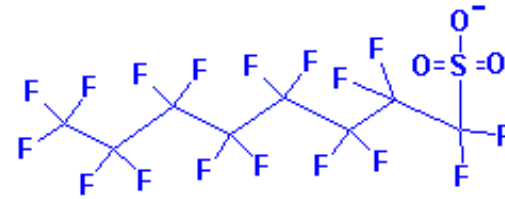
Location of 3M PFC Sites in Washington Co., Minnesota



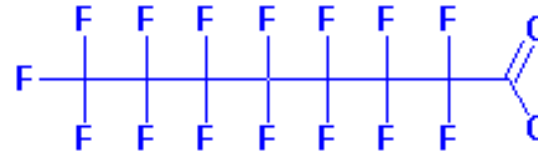
PFAS of Concern in Washington County



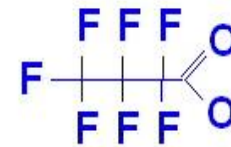
Perfluorooctane sulfonate



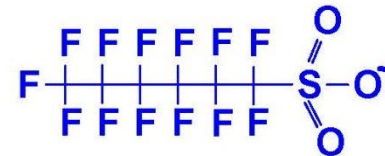
Perfluorooctanoic acid



Perfluorobutanoic acid



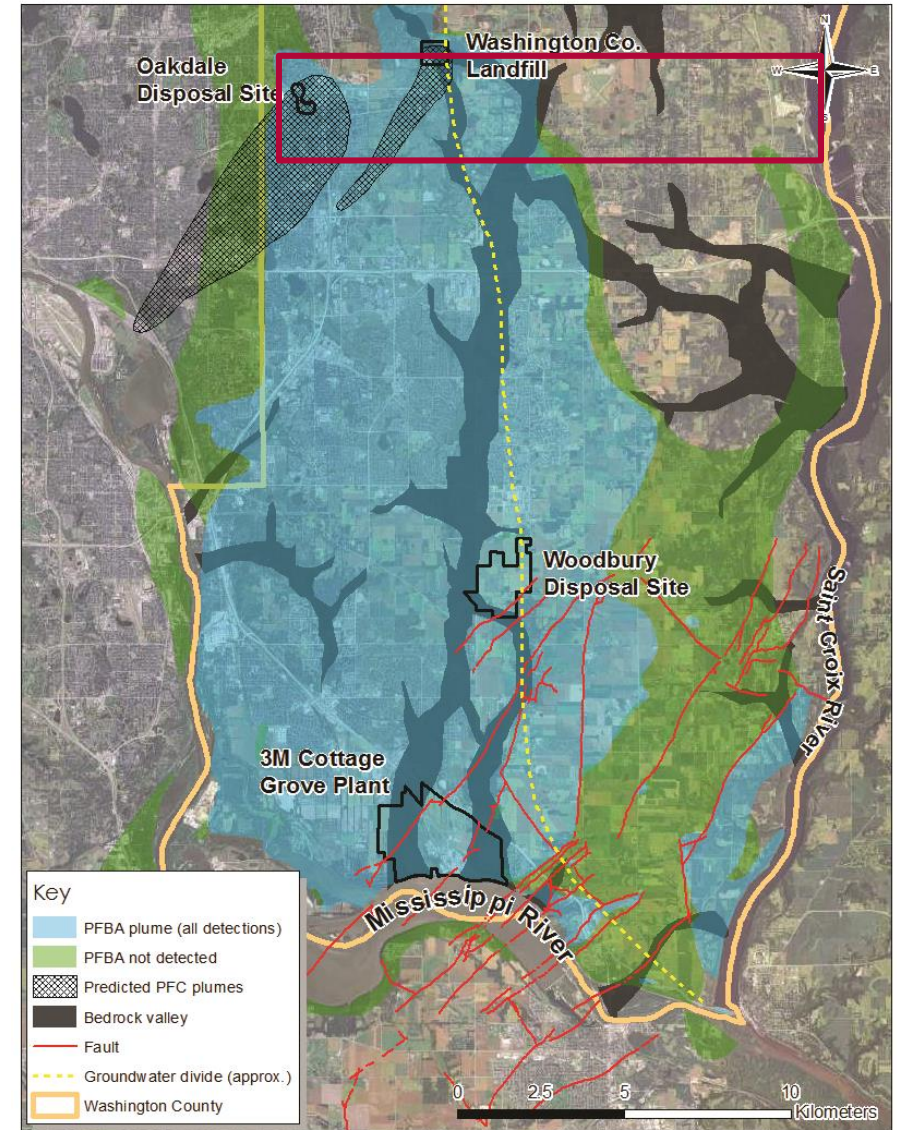
Perfluorohexane sulfonate



Other PFCs detected: PFPeA, PFHxA, PFBS; nearly always occur as a mixture

Geology + Surface Water Transport + PFAS Persistence = Megaplume

- Over 130 mi² of groundwater contaminated
 - 4 major aquifers
 - 8 municipal water supply systems
 - >1,800 private wells
 - 600+ drinking water advisories issued to date
 - MUCH larger plume than models predicted
- PFBA most widespread
- Distribution controlled by:
 - Bedrock features (buried valleys, faults/fractures, karst)
 - Groundwater-surface water interactions
 - Human interventions
 - PFAS partitioning



MDH Health-Based Values for PFAS Compounds

- **PFOS: 0.027 ppb**
- **PFOA: 0.035 ppb**
- **PFBA: 7 ppb**
- **PFBS: 2 ppb**



- **MDH evaluates the additive effects of PFAS: Hazard Index (HI)**
 - **Allows us to account for differing levels of toxicity in similar chemicals**
- **Protective for both long-term/lifetime and subsequent fetal exposures**
- **Based on animal studies showing slight liver and thyroid effects (adults) and immune system and developmental effects (infants/children)**
- **Currently using PFOS value (0.027 ppb) as surrogate value for PFHxS**



Risk Communication and Community Engagement

Communication (Old Way)	Engagement (New Way)
Communicate To...	Deliberate With...
Public Hearing	Community Conversation
Talk to / Tell	Talk with / Share
Seeking to Establish / Protect Turf	Seeking / Finding Common Ground
Authority	Responsibility
Influencing the Like-Minded	Understanding Those Not Like-Minded
Top-Down	Bottom-Up
Building a Decision-Making Hierarchy	Establishing a Stakeholder Network
Goals / Strategic Plan	Values / Vision
Products	Process
Public Relations	Public / Community Engagement

Risk Communication is...

Information

Resources



Informed Decisions about Risks to Health



PFCS COMMUNICATIONS PLAN

DRAFT 2

Prepared by MDH Communications
Updated June 7, 2018

COMMUNICATIONS GOALS

- Inform affected Minnesotans of the issue and encourage them to take recommended protective actions
- Provide risk context and background through audience-appropriate, plain-language messaging
- Explain process to this point and next steps

COMMUNICATIONS OBJECTIVES

- 100 percent of affected Minnesotans receive direct communication about the issue and recommended protective actions by Friday, August 26.
- All secondary audiences are notified of the issue and recommendations by Friday, August 26.
- Accurate messages and positive narrative of protection/precaution dominates media coverage throughout duration of project.

SPOKESPEOPLE

MDH

Planning

MDH General Messages Used to Communicate Risk

- We take a cautious public health approach
- This is a area of active scientific research – discuss scientific method
- As new knowledge becomes available, we will let you know.
- Acknowledge uncertainty
- Explain differences in health guidelines

6/12/2018

MDH Minnesota
Department of Health
ENVIRONMENTAL HEALTH

Talking Points: EPA release of health advisory values for PFOA/PFOS

May 19, 2016

Key points:

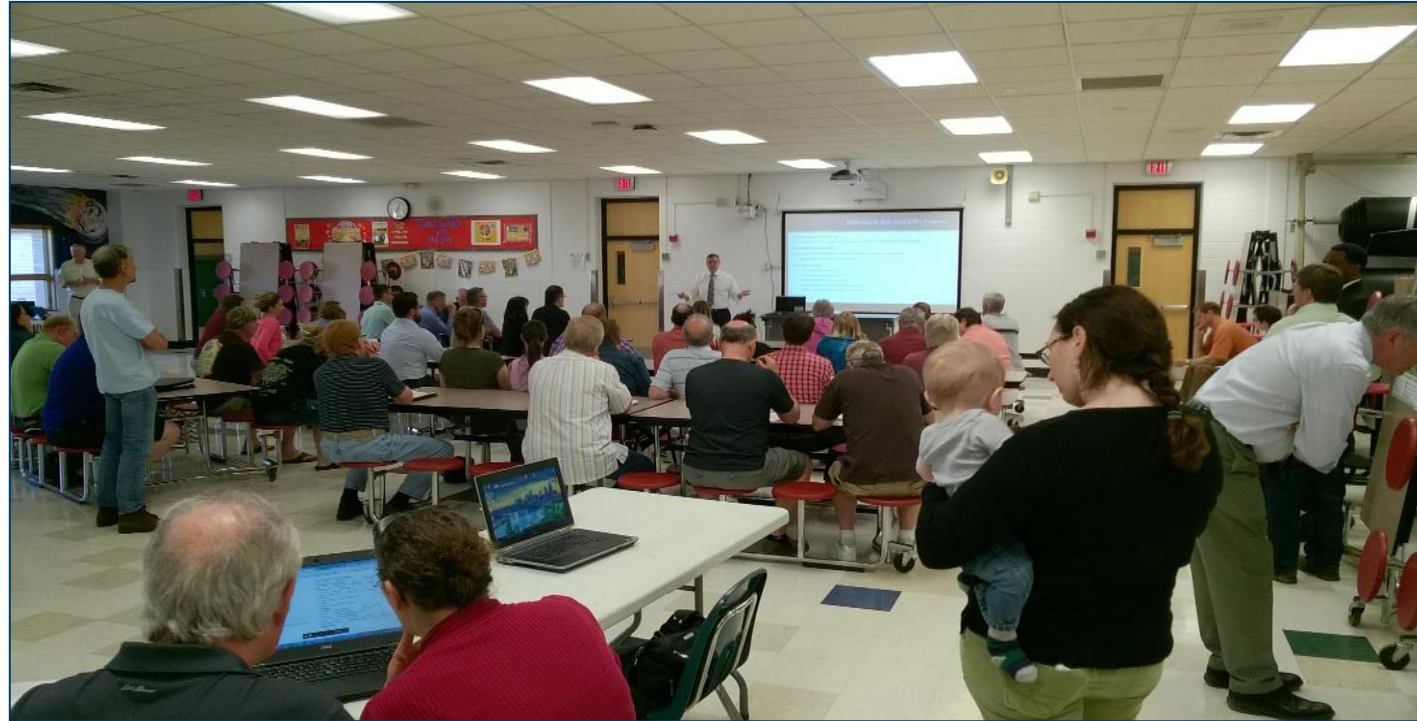
- Since 2002, MDH has been assessing the potential health impacts of perfluorochemicals

MDH Minnesota
Department of Health
DRINKING WATER PROTECTION/ENVIRONMENTAL HEALTH RISK ASSESSMENT

MDH Internal Message Blocks: PFAS Update

Information in this document is for MDH staff to use for their own understanding and to use as a resource when answering questions from affected people in Minnesota or developing materials for distribution.


When necessary, please refer people to the appropriate content expert for specific and in-depth information.




- Empathy and caring
- Competence and expertise
- Honesty and openness
- Dedication and commitment

(Covello, 1992, 1993)

MDH Risk Communication Tools

 **Minnesota Department of Health**
January 12, 2016 · 🌐

News Release: Levels of PFCs in the blood of long-time East Metro residents continue to go down after steps taken in 2006 reduced PFCs in their drinking water.

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PFC levels continue decline in East Metro residents

Levels of perfluorochemicals (PFCs) in the blood of long-time East Metro residents continue to go down after steps taken in 2006 reduced PFCs in their



About Perfluorochemicals (PFCs) in Drinking Water FOR HEALTH PROFESSIONALS


In May 2017, the Minnesota Department of Health (MDH) released new drinking water guidance values for two PFCs (known as PFOS and PFOA). The revised guidelines are lower than previous health guidance for PFCs in drinking water. We anticipate that people whose water supplies have been affected by PFC contamination, or who have recently learned about this, may bring concerns and questions to their health care providers.

Water supplies that have been affected by PFCs are private wells in parts of Washington County and six community public water supplies (Oakdale, Lake Elmo, Woodbury, Cottage Grove, St. Paul Park, and Bemidji). All of the affected cities identified above will be able to manage their public water systems to provide drinking water that meets the new MDH health-based guidance. Several hundred private wells have been affected, and many of these homes now have treatment systems to remove PFCs. Ongoing efforts to identify other affected private wells are underway. MDH believes that the most affected private wells have already been identified.

What to know before talking with your patients

The new MDH guidance values reflect an amount of PFCs in water calculated to protect all members of the population from both short and long-term health risks.

N E W S R E L E A S E

 **Minnesota Department of Health**
FOR IMMEDIATE RELEASE | 09/07/16

Public meetings to address residents' questions about PFCs in their wells set for Sept. 19, 26

Residents of south Washington County who live in or near areas where groundwater has been contaminated with perfluorochemicals (PFCs) will have an opportunity to ask questions about PFCs and discuss this issue one-on-one with staff from the Minnesota Department of Health (MDH), the Minnesota Pollution Control Agency (MPCA) and Washington County at two public meetings Sept. 19 and Sept. 26.

The meetings will take place from 6 to 9 p.m. Sept. 19 at Oak-Land Junior High (cafeteria) in Lake Elmo and 6-9 p.m. Sept. 26 at the Cottage Grove City Hall (Training Room). The meetings will be held as "office-hours", with no formal presentations, to give residents ample time to discuss their individual situations with staff. Informational materials will also be available.

The affected areas are primarily in southern-most Cottage Grove, Grey Cloud Island Township, southern Lake Elmo, and the west edge of West Lakeland Township. In August, MDH sent letters to about 80 private well owners in those areas informing them that water from their

MDH Risk Communication Tools

m DEPARTMENT OF HEALTH

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Perfluorochemicals (PFCs)

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PFCs In Fish
PFCs in Minnesota
PFCs - Home Water Treatment
Additional Resources
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Hazardous Sites & Substances

Hazardous Sites & Substances Home
Sites
Topics

Related Topics

Health Based Rules and Guidance for Groundwater
Special Well Construction Areas

MDH Current Activities: Perfluorochemicals (PFCs) in Minnesota

Also referred to as Perfluoroalkyl Substances (PFAS)

May 2018

- [Private Drinking Water Well Sampling Request Form - Released June 2018](#)
- [Updated Fish Consumption Guidelines - Released May 2018](#)
- [Updated Guidance Values for PFOA and PFOS - Released May 2017](#)

Information for affected Minnesotans

- [Response in Affected Communities - Updated May 2018](#)

Share This
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Of Interest

[MDH Well Sampling Request Form](#)

Information from the MN Pollution Control Agency:
[3M and PFCs: 2018 Settlement](#)

[Perfluorochemicals \(PFCs\) in Minnesota](#) for information about specific sites in the state.

For Health Professionals:
[About Perfluorochemicals \(PFCs\) in Drinking Water](#)

Questions?

[Hazardous Sites & Substances Contacts](#)

MDH Risk Communication Tools



Minnesota Department of Health
625 Robert St. N.
St. Paul, MN 55164-0975
www.health.state.mn.us

Summary of Results

Perfluorochemicals in Homes and Gardens Study

DATA UPDATE: CANCER INCIDENCE IN DAKOTA AND WASHINGTON COUNTIES

MCSS Epidemiology Report 2015:1

May 13, 2015



Minnesota Cancer Surveillance System

Chronic Disease and Environmental Epidemiology Section

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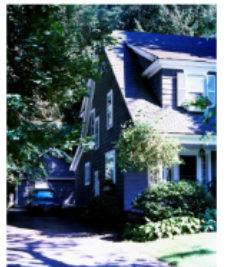
Site-Specific Meal Advice for Tested Lakes and Rivers

The Minnesota Department of Natural Resources (DNR), the Minnesota Pollution Control Agency (MPCA), and the Minnesota Department of Health collaborate in producing the fish consumption advisory. Each year, the DNR collects fish from lakes and rivers for testing. Minnesota has around 6,000 fishable lakes. Fish from over 1,400 lakes and streams in Minnesota have been tested for contaminants.

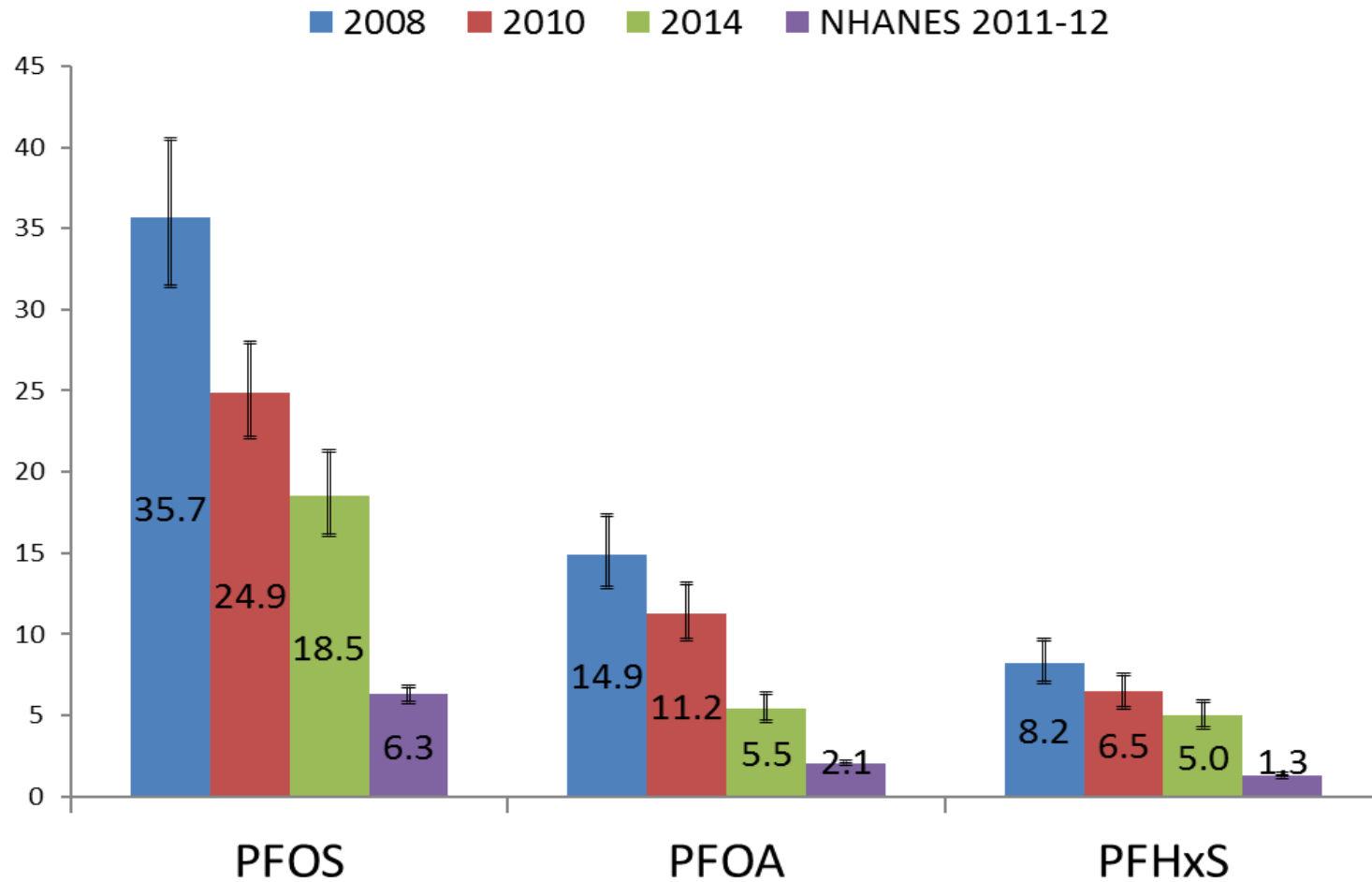
All waters from which fish have been tested are listed in the tables below. The waters that have been tested are not necessarily more contaminated than those

MDH collected samples from

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Biomonitoring Data Shows Interventions are Working



Conclusions

- PFAS pose a significant challenge to state and federal environmental and health agencies
 - Human and ecological risks still unclear
- The varied uses of PFAS in consumer and industrial products and processes means many potential sources with differing PFAS mixtures
- The extreme persistence and unique chemical and physical properties of PFAS can result in unusual fate and transport and exposure pathways
- PFAS are an active area of scientific research
- All of this makes for unique risk communication challenges

Thank you!

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<http://www.health.state.mn.us/divs/eh/hazardous/topics/pfcs/current.html>