PFAS and Health Effects

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Guidance for Drinking Water

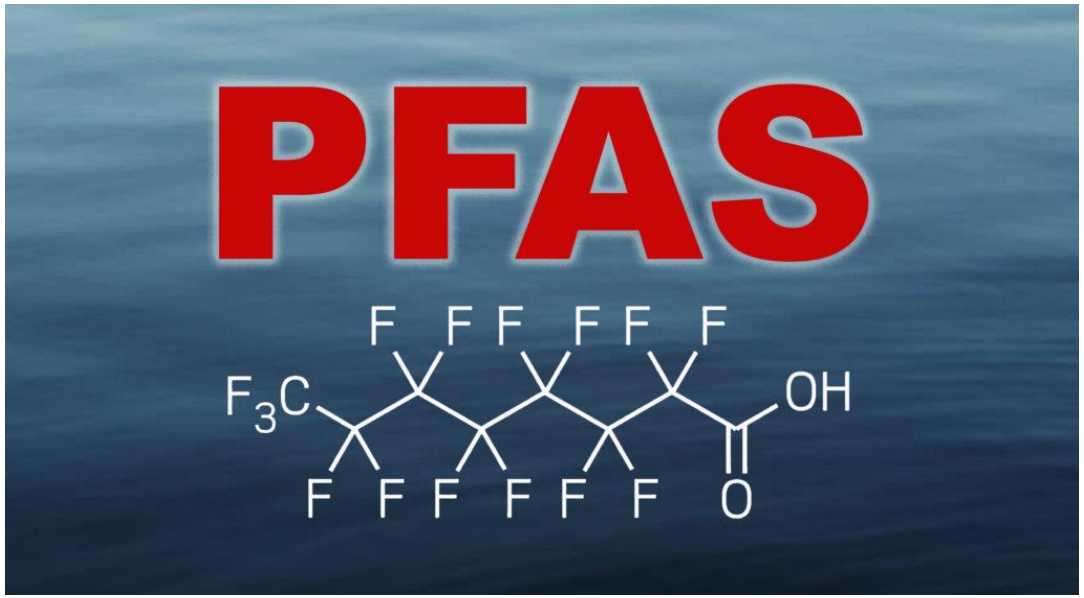
- Minnesota Health-based Guidance
  - Health-Based Values
  - Concentration of a contaminant(s) in water that is likely to pose little or no health risk to people who drink the water
  - Not enforceable

- EPA
  - Maximum Contaminant Levels (MCLs)
  - Health, cost, feasibility
  - Enforceable

PFOS and PFOA Through the Years

Year	PFOS Guidance (ppt)	PFOA Guidance (ppt)
2002	1,000	7,000
2006	600	1,000
2007	300	500
2009	70	300
2017	27	35
2024	2.3 7.6 cancer	0.24 0.0079 cancer

PFAS – What are they?



- Per- and Polyfluorinated Substances (PFAS)
- More than 4,000 chemicals
- Heat, grease, stain, oil, and water resistant

Most Sensitive PFAS Health Effects

- Immune system
- Developmental
- Cholesterol/lipid (liver)
- Thyroid
- Cancer

Goal – Reduce Exposure!

Goal - Reduce Exposure

https://time.com/6281242/pfas-forever-chemicals-home-beauty-body-products/

Health Risk Questions?

MDH Health Risk Assessment Unit

Email: health.risk@state.mn.us Phone: 651-201-4899

PFAS Regulatory Updates

Lucas Martin P.E. – District Engineer, Drinking Water Protection, MDH

May 9, 2024

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EPA Maximum Contaminant Levels (MCLs) for PFAS

April 10th, 2024 – EPA announced final National Primary Drinking Water Regulation (NPDWR) for **six** PFAS chemicals

The regulation includes:

- MCLs: enforceable standards
- Maximum Contaminant Level Goals (MCLGs)
  - health-based goals
- Hazard Index (HI): accounts for additive health effects of two or more PFAS

EPA MCLs for PFAS (Cont.)

Chemical	MCL (ppt)	MCLG (ppt)
PFOA	4.0	0
PFOS	4.0	0
PFHxS	10	10
GenX	10	10
PFNA	10	10
Hazard Index (HI)	1 (unitless)	1 (unitless)

EPA PFAS Rule Implementation

Public Water Systems will be **required** to:

Test

- Initial – within 3 years
- Ongoing

Inform Public

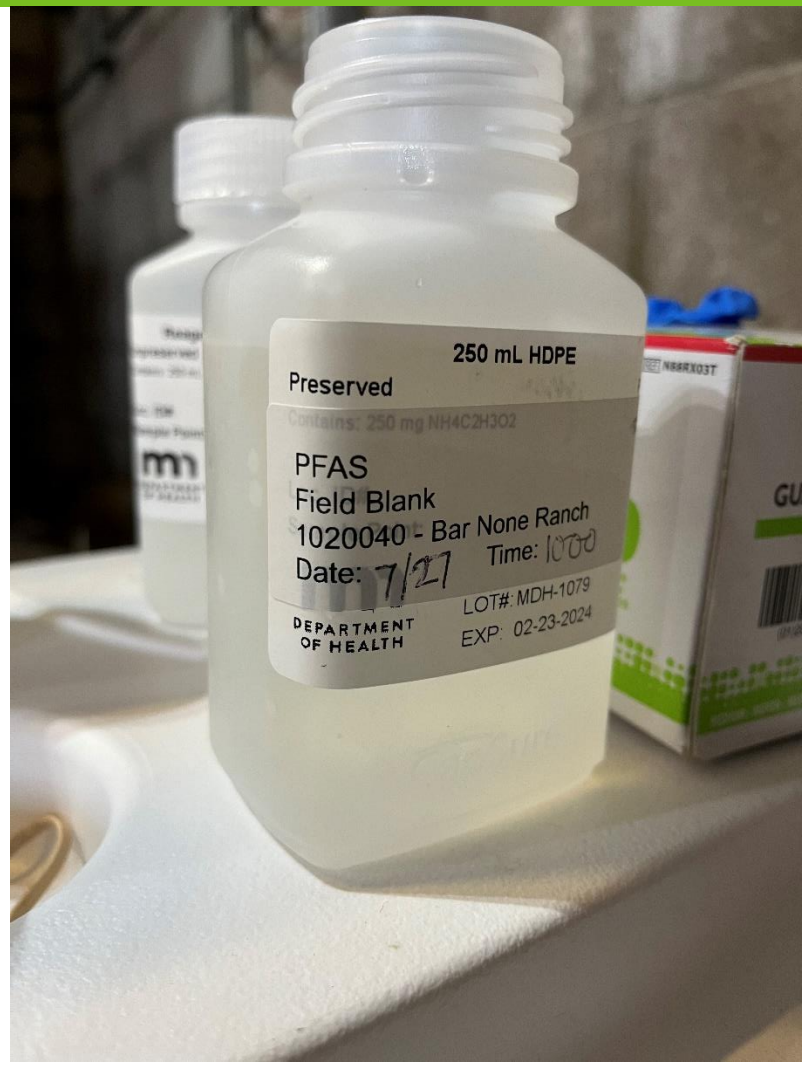
- Consumer Confidence Report – after 3 yrs
- Public Notification if > MCL

Take Action

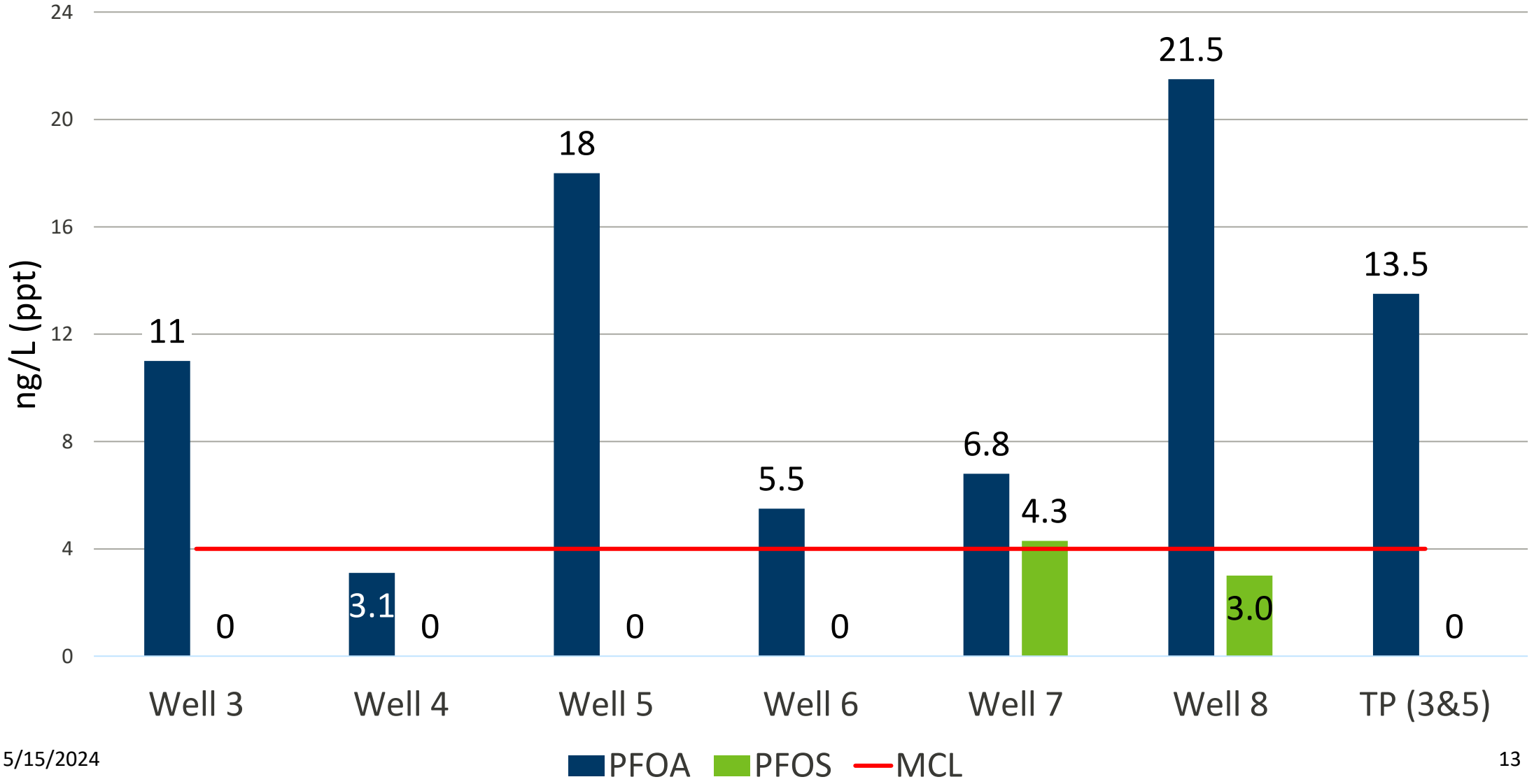
- Notice of Violation – after 5 years
- Compliance Plan

MDH PFAS Sampling

- Proactive – before required by EPA
- Statewide – 95% of community systems
- Advanced Testing – now detecting below 2 ppt
  - Current detection limits much lower than in past
- Hastings – started PFAS sampling in 2007
  - First consistent detections of PFOA starting in 2011
  - Sampling quarterly
- **Hastings met MDH guidance for PFAS until developments in 2024**

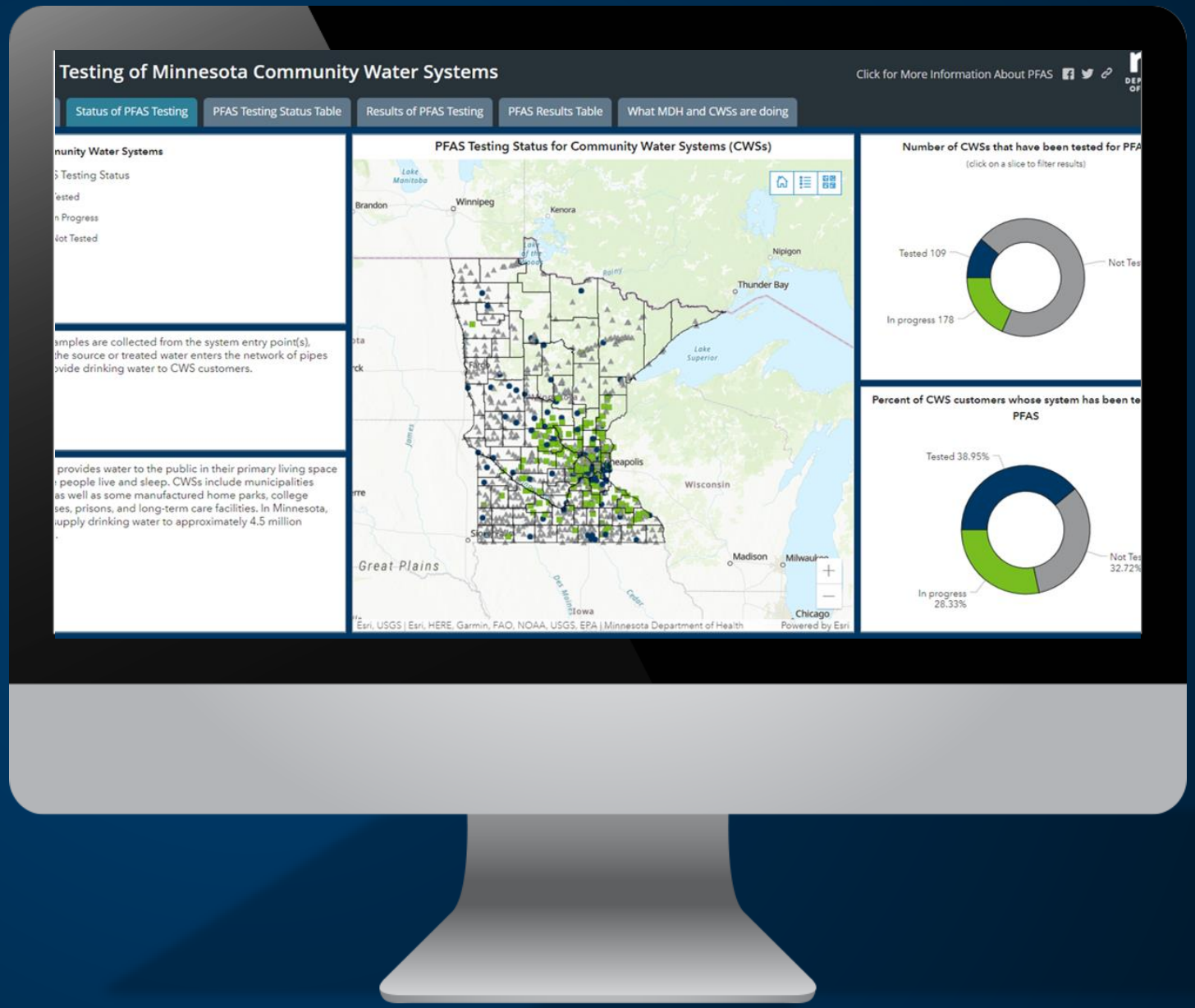


Hastings PFAS Results



Interactive Web Dashboard

- Started in June 2022
- Status of PFAS testing
- PFAS testing results
- MDH guidance
- EPA MCLs



https://www.health.state.mn.us/communities/environment/water/pfasmap.html

Water System Actions and Treatment Options

- Shut down high PFAS wells
- Blend water sources
- Reverse Osmosis (RO)
- Ion Exchange (IX)
- Granular Activated Carbon (GAC)

Home PFAS Treatment

Point of Use (POU) Activated Carbon

Reverse Osmosis (RO)

Maintenance!

NSF/ANSI Standard 53 (or 58 for RO)
PFOA & PFOS Reduction Claims

Home PFAS Treatment – MDH Website

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PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

History of PFAS in Minnesota

MDH Cancer Reporting System

MDH PFAS Biomonitoring: East Metro

PFAS and Private Wells

PFAS Sites in Minnesota

PFAS and Fish

PFAS and Health

PFAS and Home Treatment of Water

If you have concerns about your health, you can take steps to reduce your potential exposure to PFAS. Filters containing activated carbon or reverse osmosis membranes have been shown to be effective at removing PFAS from water supplies. All water treatment units require regular maintenance to work properly. Water treatment units that are not properly maintained will lose their effectiveness over time.

Other types of common water treatment systems, such as water softeners or iron filtration systems, are not likely to remove PFAS. Boiling water will not remove PFAS. While many homes have whole-house water softening or iron filtration systems, sampling data indicate that those systems do NOT remove PFAS.