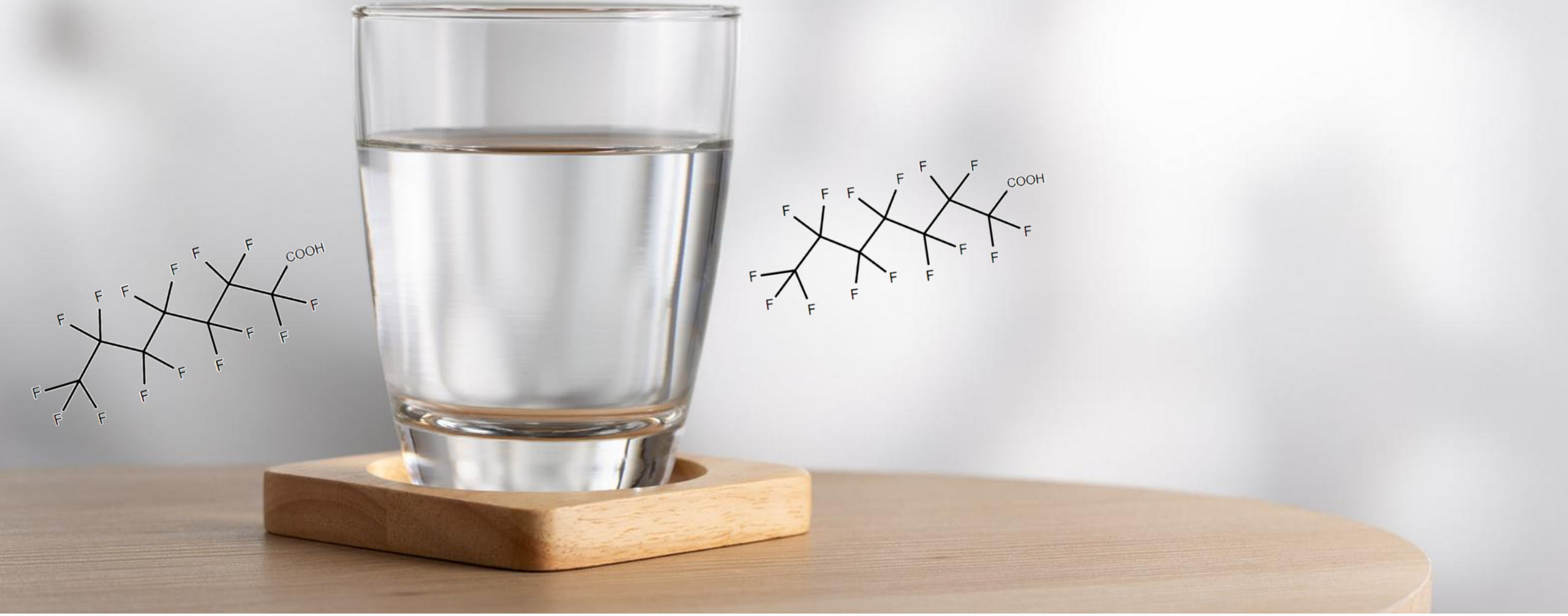

Washington State Department of HEALTH

WA STATE STANDARDS FOR PFAS IN DRINKING WATER

State Board of Health June 12, 2024

Speakers

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Overview

- What are PFAS?
- State Action Levels (SAL)
- SAL Rule Implementation
- EPA Maximum Contaminant Levels (MCLs) and SAL Comparison

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)
Nonstick, Stain and Water Resistant, Heat Stable

Some PFAS are PBTs

Persistent in the environment

Bioaccumulate in humans

Toxic at low levels

Health Concerns

In Humans

- Increased serum cholesterol
- Altered liver enzymes
- Reduced immune response to vaccines
- Lower birth weight
- Blood pressure problems during pregnancy
- Increase risk of thyroid disease
- Increased risk of cancer (kidney and testicular)

In Laboratory Animals

- Liver toxicity
- Developmental toxicity
- Reproductive toxicity
- Immune toxicity
- Endocrine disruption
- Tumors in liver, pancreas, testes

WA State Action to Address PFAS

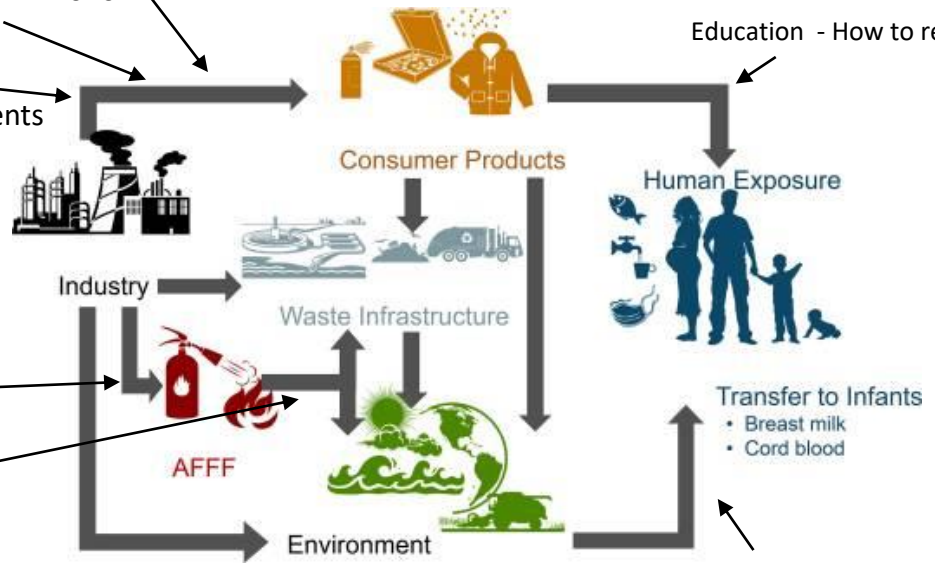
Cosmetics (HB 1047)

Ban on PFAS in food contact paper RCW 70A.222.070

Safer Products for Chapter 70A.350 RCW
- Aftermarket stain and water proofing treatments
- Leather and textile furnishings (indoor)
- Carpets and rugs

Ban on PFAS in firefighting foam RCW 70.75A

WA Dept of Ecology safe foam disposal program



Education - How to reduce PFAS exposure

- Drinking water standards
- Fish consumption advisories

Source: Sunderland EM et al. (2019) **A review of the pathways of human exposure to poly- and perfluoroalkyl substances (PFASs) and present understanding of health effects.** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380916/

SALs set to be Health Protective

- A level in water expected to be without appreciable health effects over a lifetime of exposure, including in sensitive groups.

- Based on best available science at the time.

State Action Level (SAL) vs. Maximum Contaminant Level (MCL)

SAL

Set as close to Public Health Goal as possible…

Considering:

- Technical feasibility

MCL

Set as close to Public Health Goal as possible…

Limit is Enforced

Considering:

- Technical feasibility
- Cost-benefit

A SAL is a Bridge to an MCL

- SALs **require** testing, public notification and **guide** public health response to results.
- Testing helps define scope of problem and necessary funding and resources.
- Testing data is needed to develop state cost-benefit analyses for Maximum Contaminant Levels (MCL).

2021 State Action Levels (SALs)

Features:

- Sets action levels for 5 PFAS.
- Requires PFAS testing by most Group A water systems.
- Requires notification of customers.
- Requires follow-up monitoring.
- Effective date: Jan 1, 2022.
- Mitigation of water is not required, but systems are encouraged to follow public health advice and funding support is available.

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Drinking water Contaminant	SAL (parts per trillion)
PFOA	10
PFOS	15
PFNA	9
PFHxS	65
PFBS	345

Implementation of the PFAS SALs

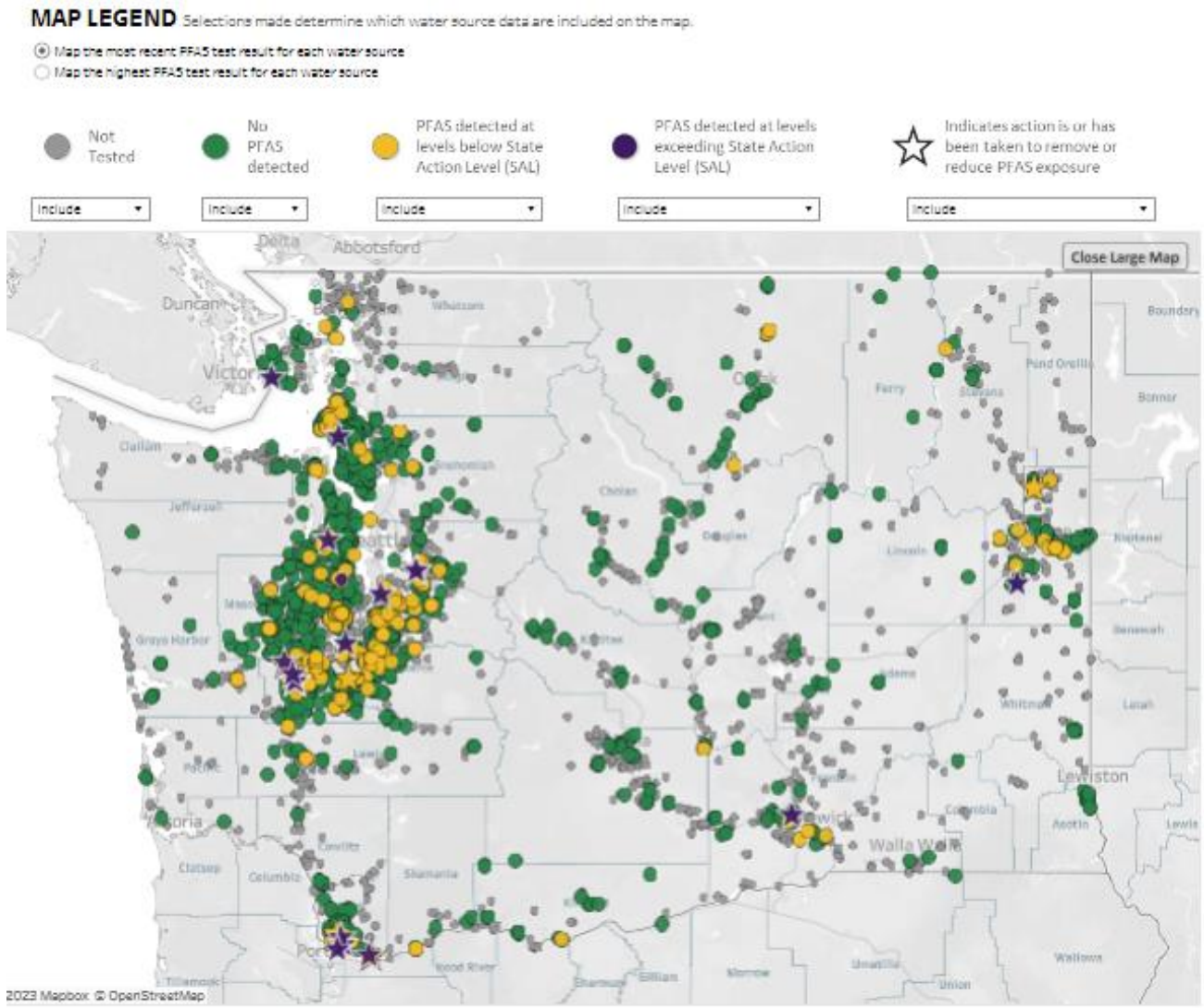
- Initial PFAS test required between Jan 2023 - Dec 2025 (EPA methods 533 or 537.1)
- SALs apply to Group A public Water Systems
  - 2,209 Community systems
  - 318 Nontransient, Noncommunity systems
  - ?/1,577 Transient Noncommunity (only asked to test if near a detection)
- Voluntary free testing program – 2022/23 reopening 2024/25

Map of PFAS Drinking Water Testing

Only includes samples for Group A water systems complying with new state rule.

- Doesn't include historical water testing results yet.
- Doesn't include military testing yet.
- Doesn't include private well results.

https://doh.wa.gov/data-and-statistical-reports/washington-tracking-network-wtn/pfas



U.S. Environmental Protection Agency (EPA) MCLs and SAL Comparisons

EPA's New Science

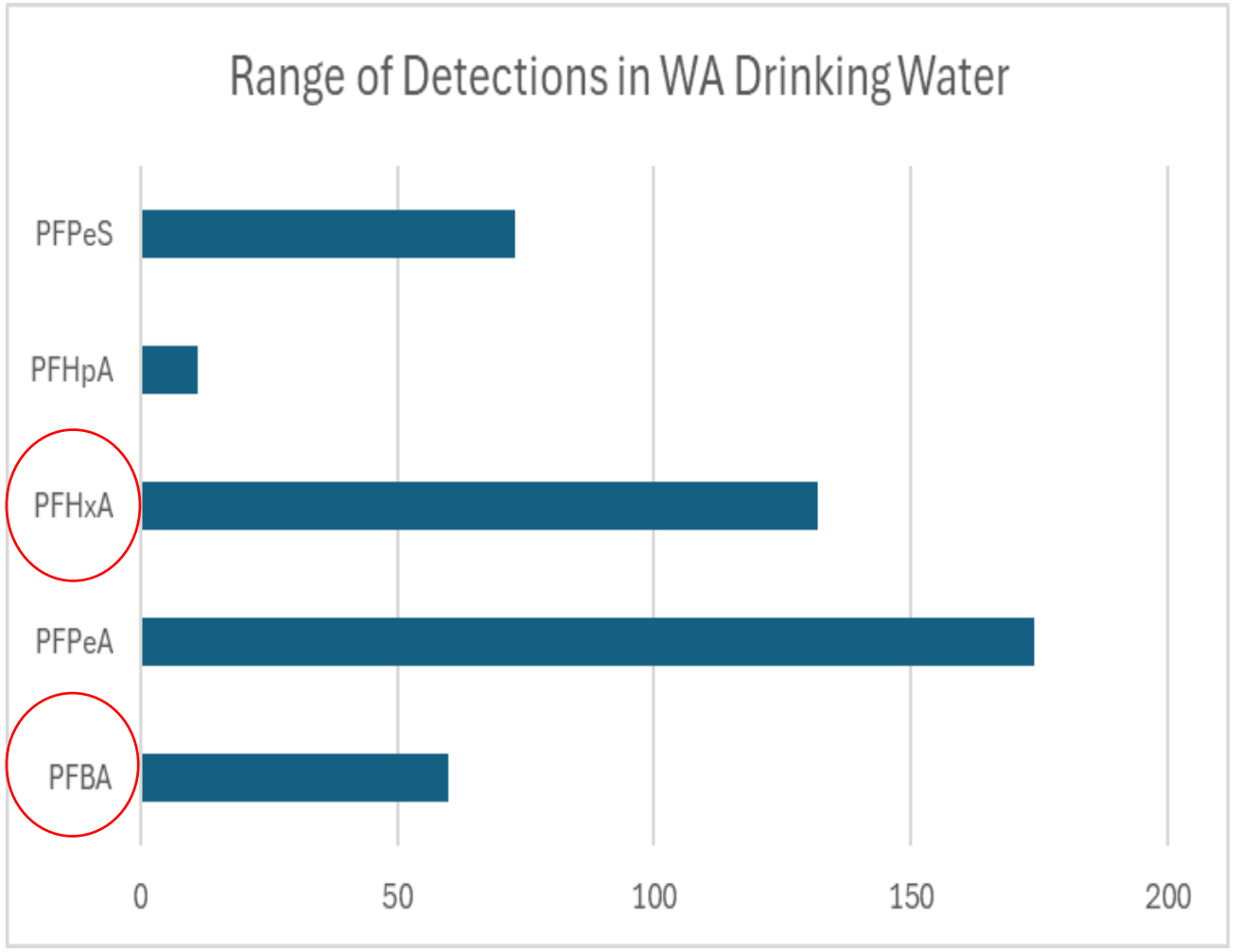
- PFOA, PFOS = Likely human carcinogens
- PFNA, PFHxS – based on Agency for Toxic Substances and Disease Registry (ASTDR) toxicity values
- GenX and PFBS – based on EPA toxicity values

- Group MCL- PFHxS, PFNA, PFBS, GenX
  - Assume effects are additive

- EPA has toxicity values for PFBA and PFHxA, did not include.

Other PFAS

- Five other PFAS frequently detected.
- No SAL to guide action.
- Develop state health recommendation?
- Adopt SAL?
- State MCL?



Note: Range shown doesn't include one water system with multiple PFAS at very high levels in San Juan County (outlier).

Evolving Health Guidelines for Drinking Water (ng/L or ppt)

EPA Health Advisories 2016

PFOA	70
PFOS	70

WA SALs 2021

PFOA	10
PFOS	15
PFNA	9
PFHxS	65
PFBS	345

Non-cancer endpoints sufficiently protective of cancer endpoint

EPA Health Advisories 2022

PFOA	*0.004*
PFOS	*0.02*
PFBS	2000
GenX	10

2024: EPA withdrew it's interim HALs for PFOA and PFOS

EPA Final MCLs 2024

PFOA	4
PFOS	4
PFHxS	10
PFNA	10
GenX	10

Grouped MCL for PFBS, GenX, PFNA & PFHxS

Impact of Federal MCLs

- Federal MCLs supersede SALs when MCL rule is adopted.
- WAC 246-290-315(8) states:

  "Upon federal adoption of an MCL, the federal MCL will supersede a SAL or a less stringent state MCL, and the associated requirements, including for monitoring and public notice. If the federally adopted MCL is less stringent than a SAL or state MCL, the board may take one of the following actions:

  (a) Adopt the federal MCL; or

  (b) Adopt a state MCL, at least as stringent as the federal MCL, using the process in subsections (6) and (7) of this section."

  (emphasis added)

State vs. EPA MCLs for PFAS in Drinking Water (ng/L or parts per trillion)

Individual PFAS	WA State Action Levels (2021)	EPA MCL (2024)
PFOA	10	4
PFOS	15	4
PFNA	9	10
PFHxS	65	10
GenX	-	10

Group MCL (Hazard Index*)		HBWC used in hazard index*
PFNA	9	10
PFHxS	65	10
PFBS	345	2,000
GenX	-	10

**Health-based water concentration (HBWC) are the "acceptable" values used to create a ratio of observed/acceptable for each of 4 PFAS. If the ratios add up to more than 1.0, the hazard index MCL is exceeded, and action must be taken to lower PFAS.*

Comparing SAL/MCL Requirements

Action	SAL	MCL
Sampling		
Initial	One sample unless detection then verification and quarterly	Two samples small groundwater – four large or surface water
Baseline	Quarterly for detections until reliably and consistently below MCL. Every 3 years for non-detect.	Quarterly starting June 2027 for detection, 3 years for non-detect starting June 2027
Public Notification		
Annual Consumer Confidence Report (CCR)	Any detection requires CCR notification currently	Any detection for initial or baseline starts June 2027
Tier 2 (30 day) notification	Required for any SAL exceedance	Required for MCL exceedance after June 2029
Treatment	Recommended, not required	Required for MCL exceedance after June 2029

Questions?