

PFAS

Informational Update

**Lan Wiborg, Director of Environmental
Services**

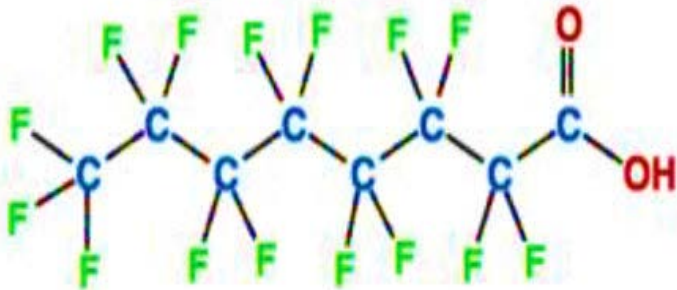
Administration Committee

March 11, 2020



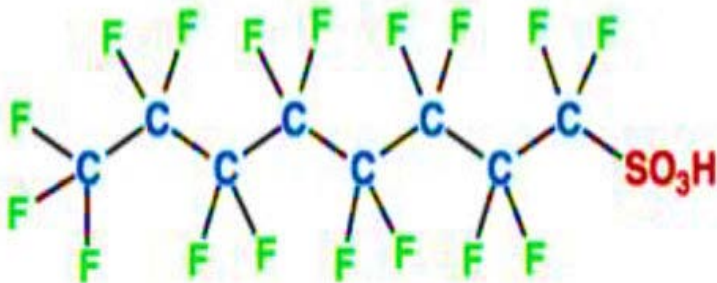
PFAS

(per- and poly-fluoroalkyl substances)



- Class of over 4,000 man-made chemicals

PFOA - perfluorooctanoic acid



PFOS - perfluorooctanesulfonic acid

- Extremely stable and persistent
 - Upside: Stable, versatile, water/oil resistant
 - Downside: Persistent in environment and body

PFAS

Contaminant of Emerging Concern (CEC)



CECs may or may not be regulated but pose some health or environmental concerns

Some Examples CECs	Timeline
PCBs	1970s-1980s
DTC & NDMA	1990s-2000s
1,4-dioxane	2000s-2010s
Microplastics	2010s-
PFAS	2010s-

PFAS

In Everyday Lives



Examples

Liquid – surfactants, AFFF, cleansers, industry

Coatings – carpets, textiles, waxes, paints

Materials – clothing, food package, pans, floss



PFAS

Potential Human Health Effects



➤ Carcinogenicity

Kidney and testicular cancer

➤ Immunotoxicity

Ulcerative colitis, immune dysregulation

➤ Endocrine toxicity

Thyroid disease

➤ Reproductive toxicity

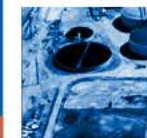
Pregnancy-induced hypertension

➤ Cardiovascular toxicity

Increased serum cholesterol

PFAS

Reducing Exposure

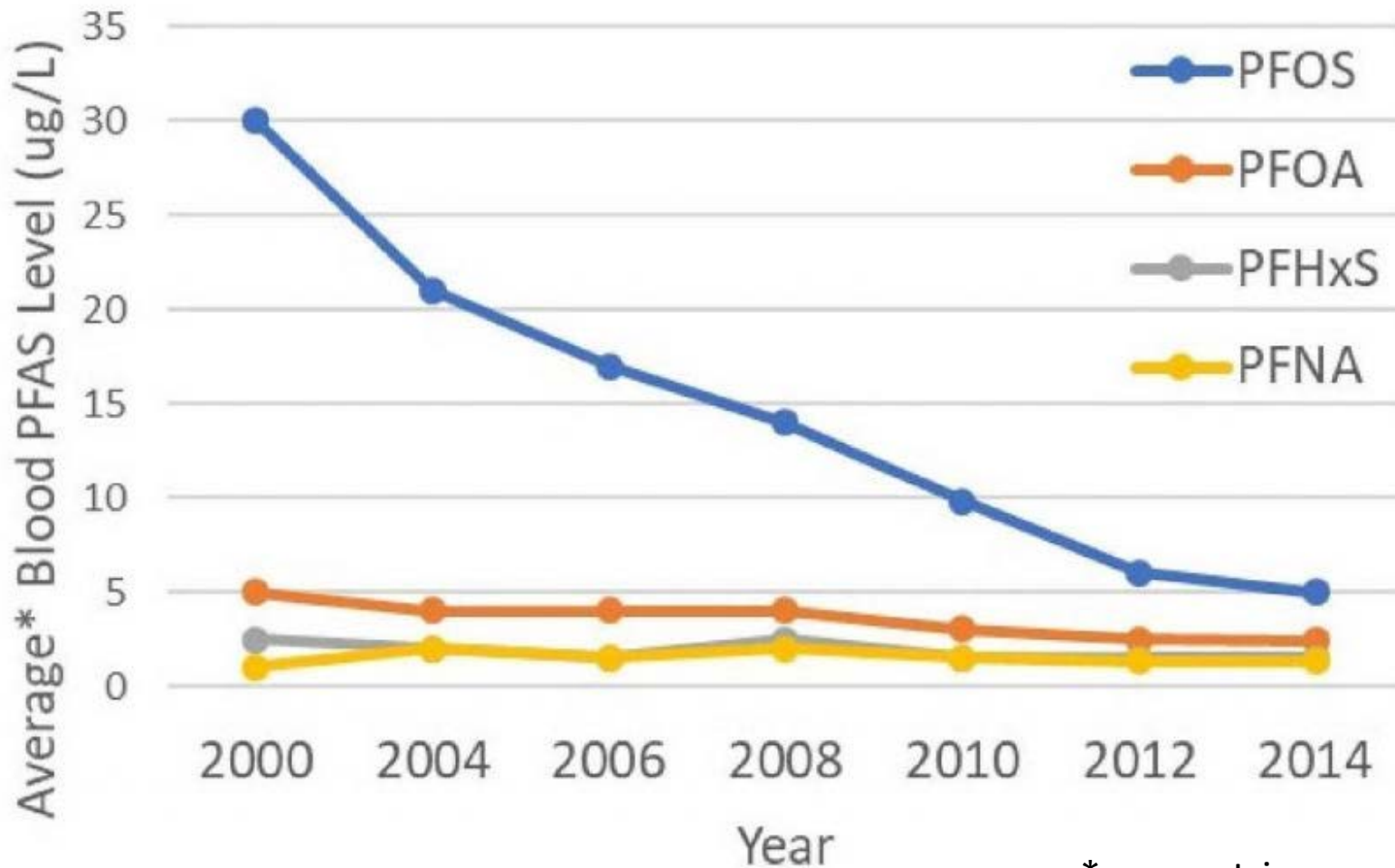


	US Phase-out	1999-2014 Blood Level	2018 Background levels (ppt)	
			Household Dust	Foundation Cosmetic
PFOS	2002	70% ↓		
PFOA	2015	84% ↓	10,000-50,000	2,370,000

***Drinking water and wastewater systems do not
produce or use PFAS chemicals***

Human Blood Levels

Decreasing Trend Following Phase-out



* geometric mean (CDC 2017)

USEPA's PFAS Action Plan

Released in February 2019 (Source: SWRCB)



TOXICOLOGY

Develop toxicity thresholds
for 21 PFAS



DRINKING WATER

Consider MCLs & broader
PFAS regulation



MONITORING

Enhanced nationwide PFAS
drinking water monitoring
in next Unregulated
Contaminant Monitoring
Rule (UCMR4)

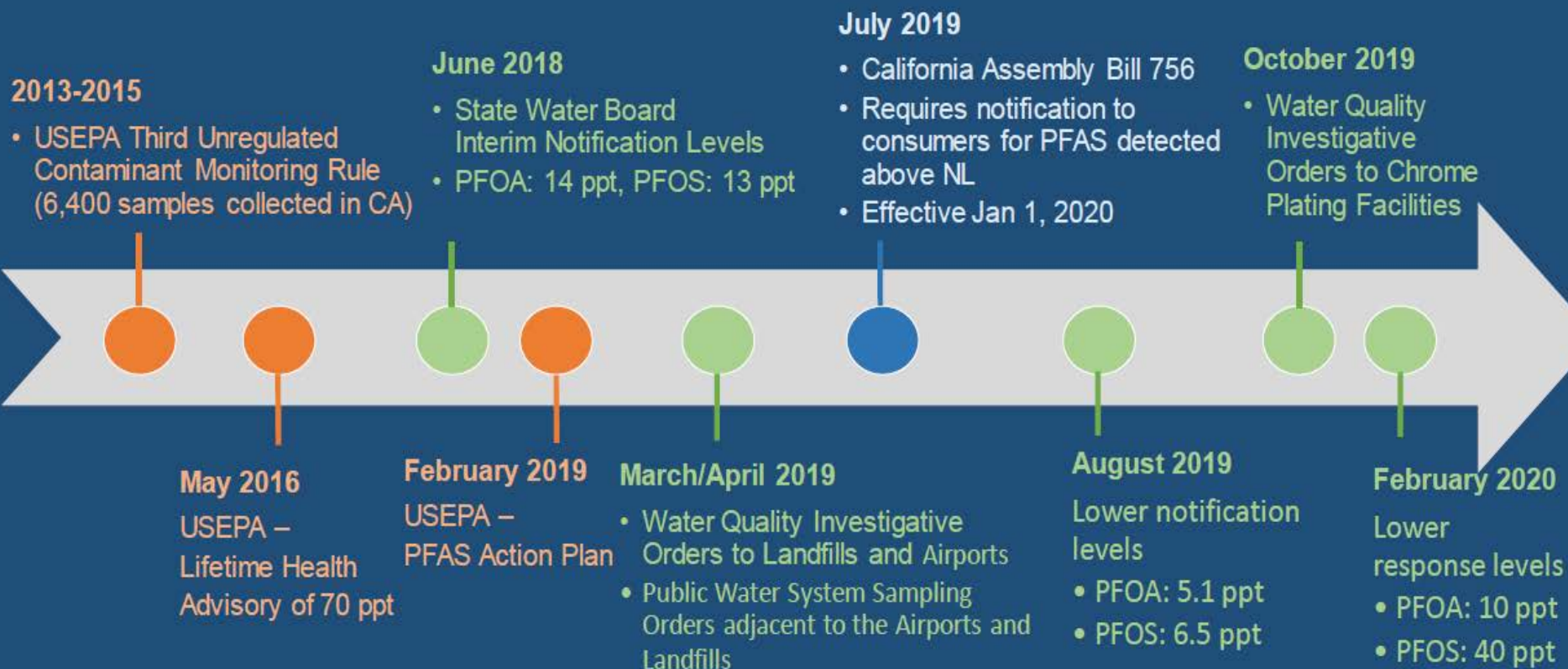


CLEANUP

Designate PFOS & PFOA as
hazardous substance &
develop interim
groundwater cleanup
recommendations

State Action: Drinking Water

Source: SWRCB

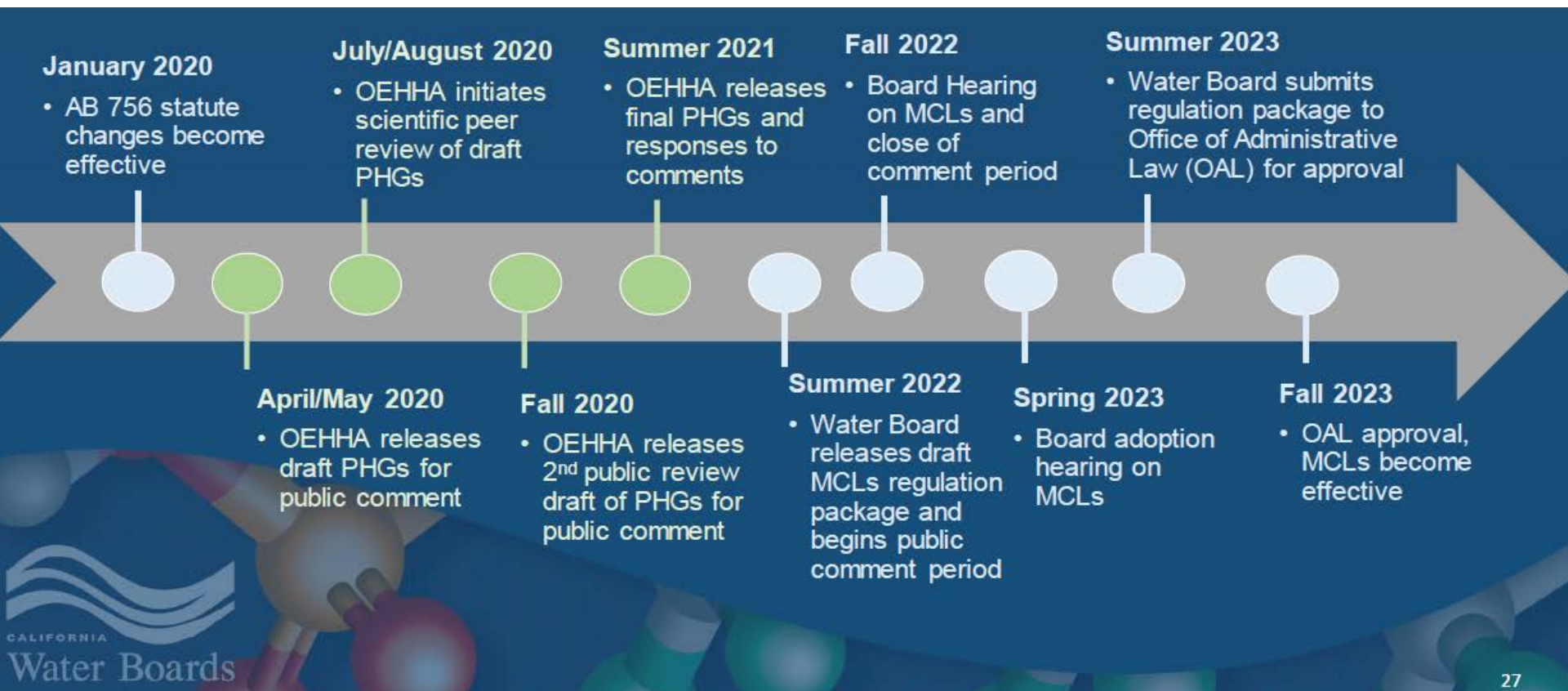


State Action: AB 756

Source: SWRCB



Authorizes SWRCB to order public water systems to monitor, report, notify the public and/or remove water sources that exceed the NLs/RLs



Upcoming State Actions

Source: SWRCB



Additional sampling outwards from impacted public water supply wells



Focused watershed-based source & public water system investigations



Sampling at Wastewater Treatment Facilities (influent, effluent, and biosolids)



Source investigations at Refineries and Bulk Terminals



Integration of data from DoD and additional sampling of public water system wells around impacted installations



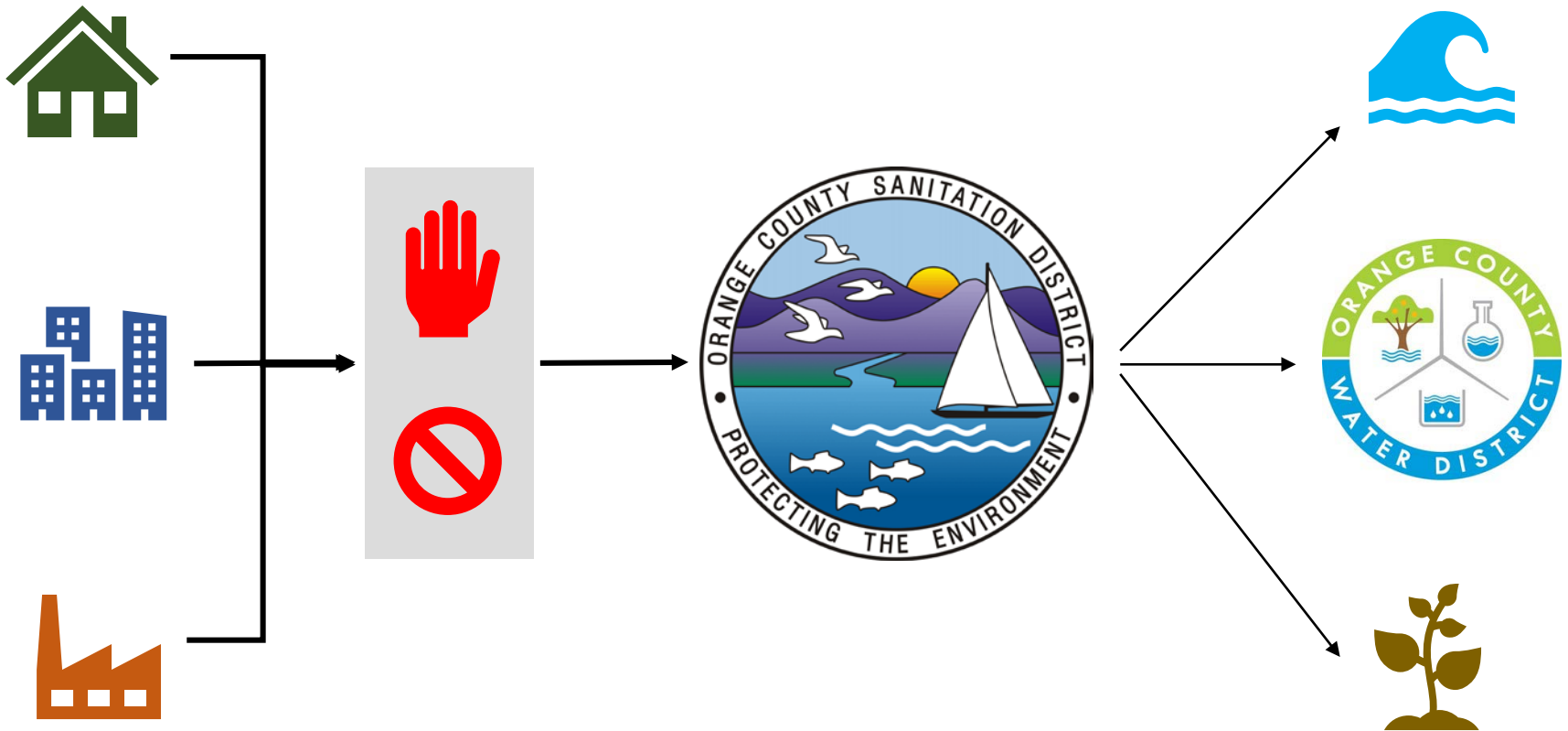
Identify strategies for domestic well sampling in impacted areas



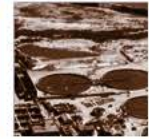
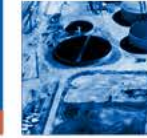
Data analysis and visualizations to inform the public and decision makers

PFAS

Potential Impact to OCSD



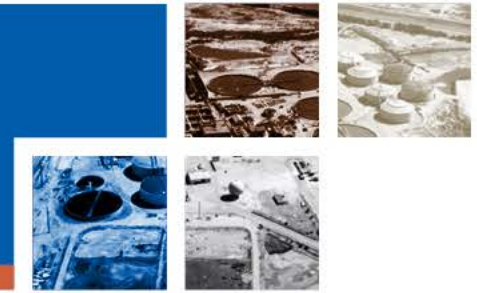
OCSD Current Actions



- Communication
 - Aligning messaging and resources with other agencies
 - Engaging regulators, legislators, and community stakeholders
 - Federal and state advocacy
 - Participating in method development
- Participate in a CASA-led review of PFAS health effects
- Conducting industrial surveys in line with state's approach
- Evaluating screening levels for discharge requests



OCSD Future Actions



- Coordinate PFAS management with other agencies
- Implement Policies & Standards (limits, conditions, etc.)
- Find, inspect, monitor, and permit potential sources
- Sample and analyze using EPA-approved methods
- Track and adapt to evolving federal/state regulations
- Optimize monitoring and reporting process



Key Messages



1. PFAS are ubiquitous in our homes and environment
2. OCSD is committed to protecting the environment and public health against the adverse impact of PFAS
3. PFAS producers and heavy users are not the same as 'receivers'
4. Remove and treat PFAS at the source
5. Base regulation and response on sound science
6. Avoid risk transfer and unintended consequence
7. Need permanent disposal/sequestration options

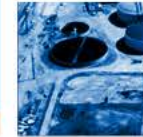




Questions?

Comparison

(Source NEBRA)



Foundation cosmetic	2,370 ppb PFOA
Pork liver in Taiwan	283 ppb PFOA
Dust in daycare center	142 ppb PFOA (median)
Household food waste	6 ppb all PFAS (mean)
US human blood serum (NHANES)	2 ppb PFOA (mean)
Control garden soil	0.36 ppb PFOA (median)
DDW Notification Levels	0.014 ppb PFOA; 0.013 PFOS