

PFAS AND OTHER EMERGING CONTAMINANTS

ACEC-EEC Summer Meeting
August 13 -14, 2018



1 Group

PFAS Per- and Polyfluoroalkyl substances

2 Categories

5 Classes

Non-Polymers

Perfluoroalkyl Substances

Compounds for which all hydrogens on all carbons (except for carbons associated with functional groups) have been replaced by fluorines



Polyfluoroalkyl Substances

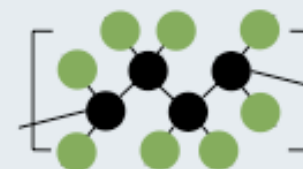
Compounds for which all hydrogens on at least one (but not all) carbon have been replaced by fluorines



Polymers

Fluoropolymers

Carbon-only polymer backbone with fluorines directly attached



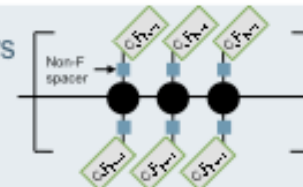
Polymeric Perfluoropolyethers

Carbon and oxygen polymer backbone with fluorines directly attached to carbon



Side-chain Fluorinated Polymers

Variable composition non-fluorinated polymer backbone with fluorinated side chains



PFAS CATEGORIES AND CLASSES

Long Chain (Legacy)

- ▶ 8+ carbons
- ▶ Degradation products - PFOS, PFOA
- ▶ Persistent - 2+ year half-lives
- ▶ No longer manufactured in US, Europe, and Japan
- ▶ Production continues by elsewhere

Short Chain

- ▶ 6 carbons or less
- ▶ Degradation Products (e.g.,): PFHxA, PFPeA
- ▶ Shorter half-lives
- ▶ Approved for use as alternatives to long chains

PFAS: LONG CHAIN VS. SHORT CHAIN



DRINKING WATER GUIDANCE VALUES, 2015-18

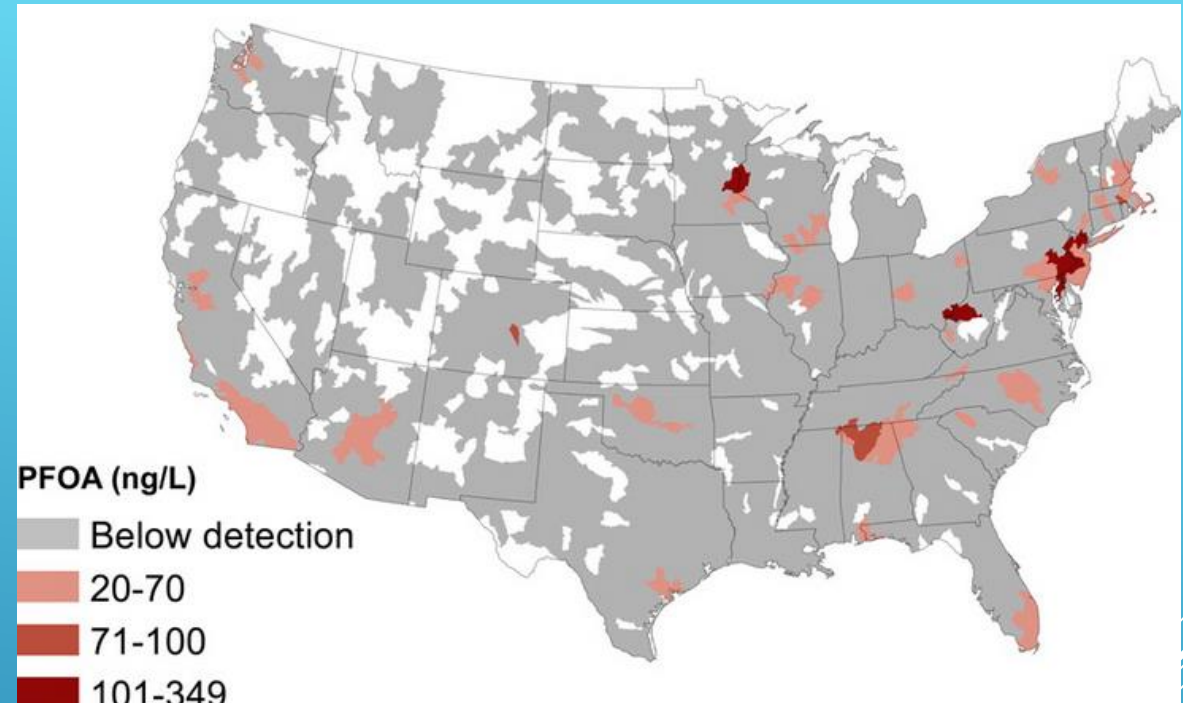
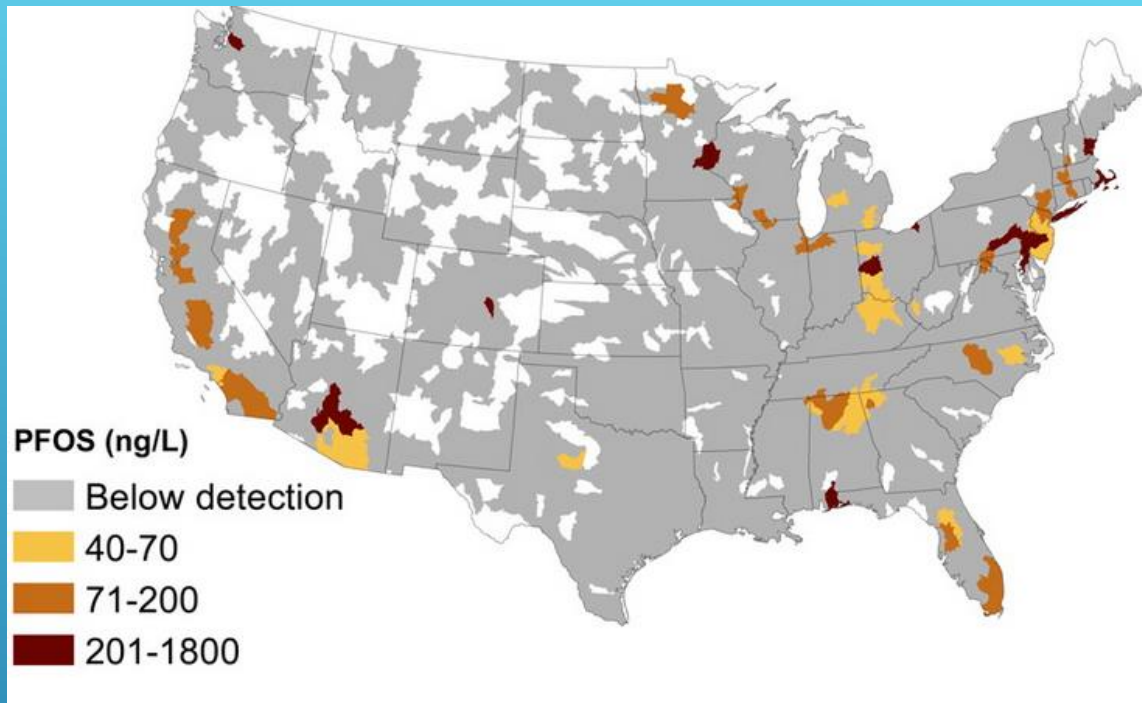
	PFOS in mcg/L		PFOA in mcg/L	
	Middle level (50 th percentile)	High level (95 th percentile)	Middle level (50 th percentile)	High level (95 th percentile)
General U.S. population:				
U.S. population in 1999-2000**: Age 12 and up	30.20	75.70	5.20	11.90
U.S. population in 2013-2014: Age 12 and up	↓ 80% 5.20	18.5	↓ 60% 2.07	5.57
Males only	6.40	22.1	2.37	5.67
Females only	4.00	15.1	1.67	5.07
Young people age 12-19	3.60	9.30	1.67	3.47

mcg/L – micrograms per Liter

CDC – Fourth National Report on Human Exposure to Environmental Chemicals, Updated Tables, January 2017

**DETECTED IN BLOOD SERUM OF 99%
OF THE US POPULATION**





Data from US EPA National Contaminant Occurrence Database (NCOD)

DRINKING WATER OCCURRENCE DATA, 2013-15

	# Detections	≥ Reporting Level		≥ 70 ppt	
		#	%	#	%
Finished Water Samples					
PFOS	33,957	268	0.8	112	0.3
PFOA	33,956	356	1.0	34	0.1
PFOS+PFOA				53	0.2
				199	0.6
Public Water Systems (5,800 systems total)					
PFOS	4,920	95	1.6	46	0.8
PFOA	4,920	117	2.0	13	0.2
PFOS+PFOA				53	0.9
				117	2.0

Reporting level: PFOS – 40 ppt, PFOA – 20 ppt

USEPA NCOD DATA, 2013-15



- Significant internal and external pressure on EPA staff to take action on PFOS, PFOA, and other PFAS
 - Cleanup levels/hazardous designation for PFOS/A
 - Assessments for GenX and PFBS
 - Consider MCLs for PFOS/A
- Likelihood of additional state regulatory/legislative initiatives

2018 POLITICAL LANDSCAPE



Steve Risotto

srisotto@americanchemistry.com

202-249-6727

THANK YOU !

