

Zone 7 Board Meeting

April 17, 2019

1

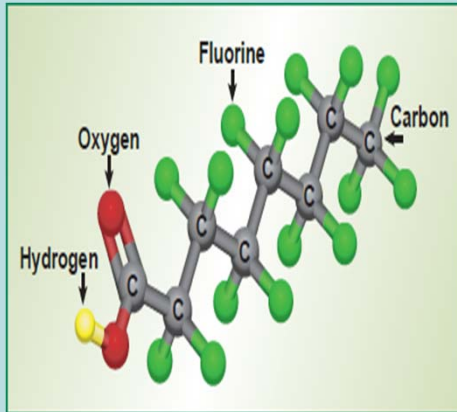
## Presentation Outline

- ❖ PFAS Background
- ❖ PFAS Exposure Paths and Concerns
- ❖ PFAS Related Regulatory Activities
- ❖ PFAS Related Zone 7 Activities

2

## What are PFAS?

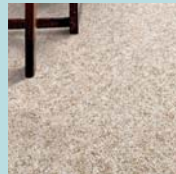
Man-made compounds used in a wide-range of products designed to be waterproof, stain-resistant, non-stick, or fire retardant since 1940s



3

## Products containing PFAS

- ❖ Cookware:
  - Teflon
- ❖ Stain Resistance:
  - Scotchgard
- ❖ Cleaning products
  - Clorox
- ❖ Fire Fighting Foam
  - AFFF – Aqueous Film-Forming Foam



4

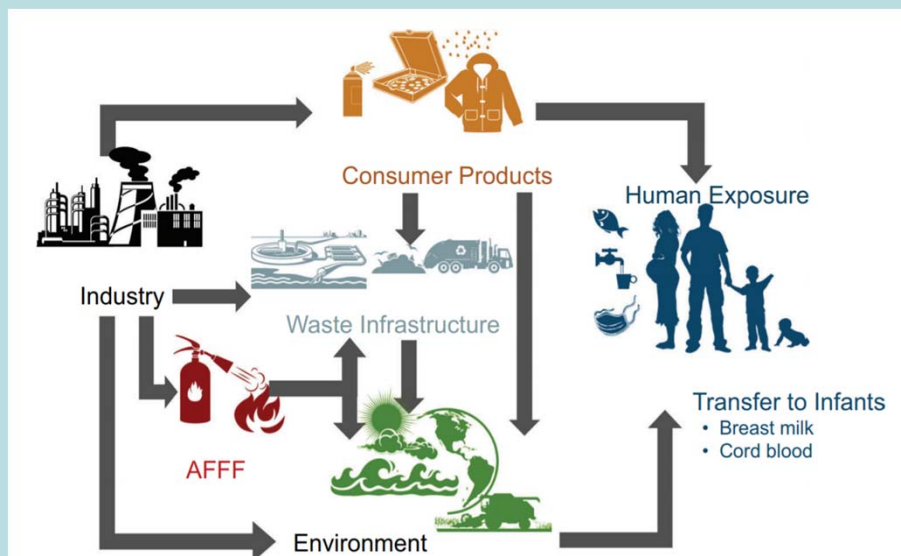
## Why are we concerned about PFAS?

- ❖ Persistent in environment and human bodies
- ❖ Tendency to accumulate in groundwater
- ❖ Possible carcinogens
- ❖ Studies indicate that certain PFAS may lead to adverse health effects
- ❖ Exposure is widespread

<https://www.atsdr.cdc.gov/pfas/pfas-blood-testing.html>

5

## How are people exposed to PFAS?

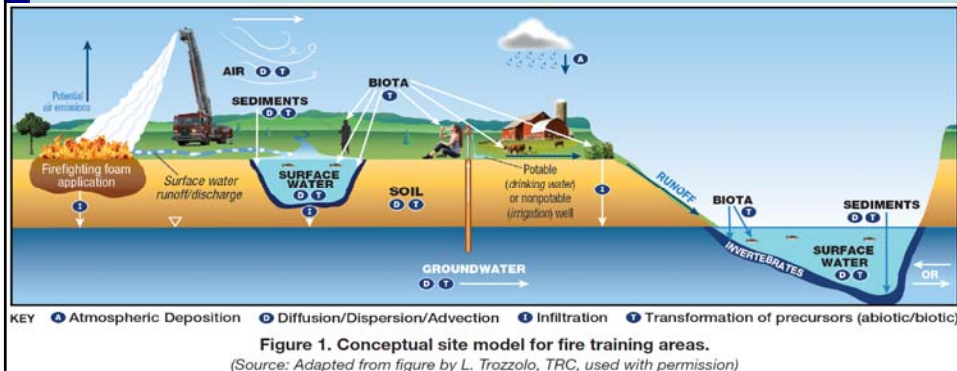


Sunderland et. Al (2019)

6

## How do PFAS get into drinking water?

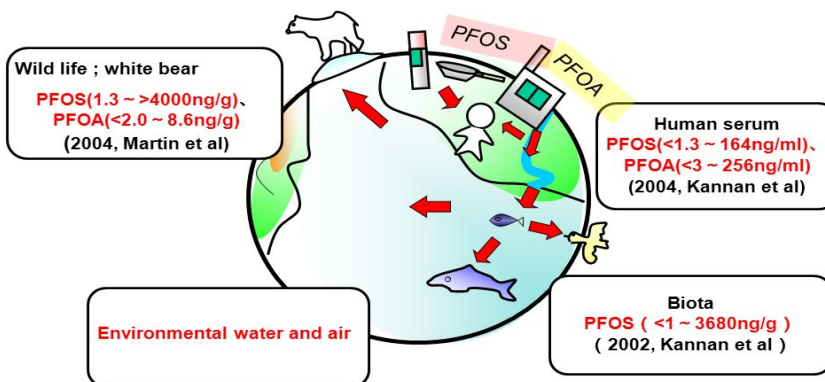
- ❖ Fire training/response sites, e.g., airports
- ❖ Industrial sites
- ❖ Landfills
- ❖ Wastewater treatment plants



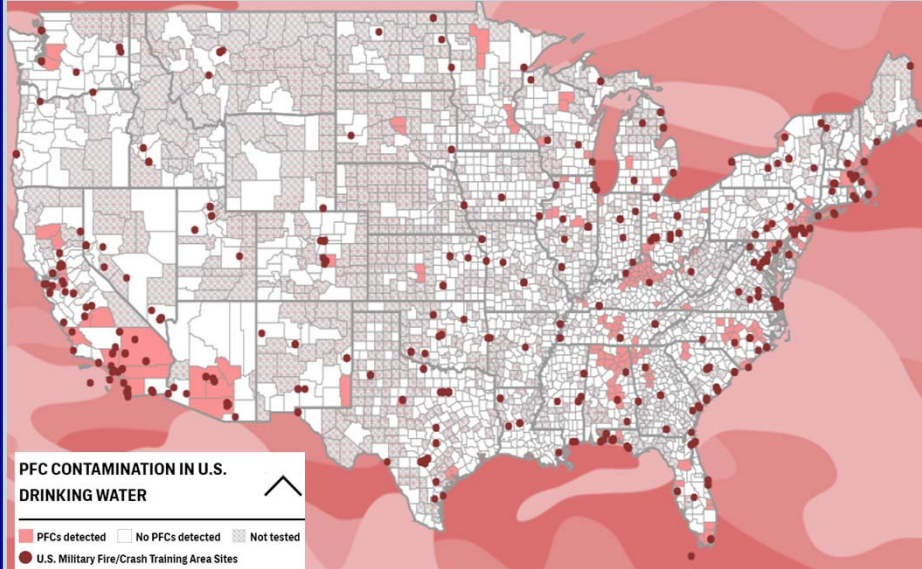
## Global Pollution Issue

### PFOS/PFOA level

#### PFOS/PFOA pollution enlargement globally



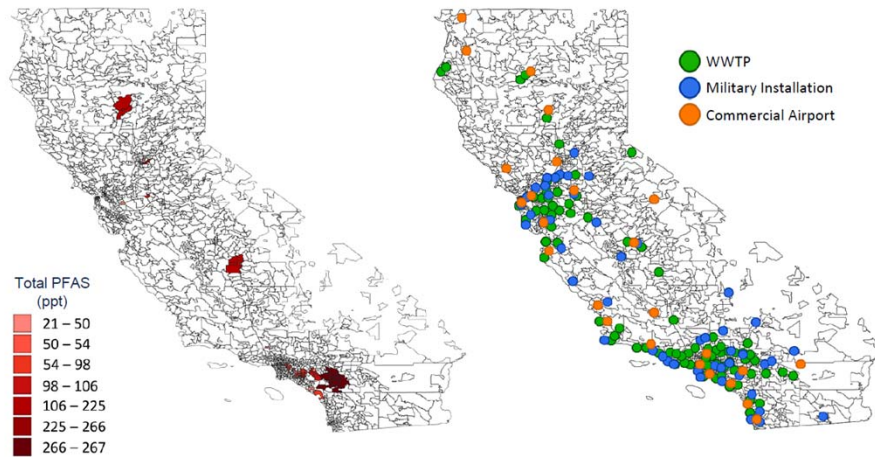
## Nationwide Issue – UCMR3 Data with Military Fire Training Sites



<https://theintercept.com/2015/12/16/toxic-firefighting-foam-has-contaminated-u-s-drinking-water-with-pfcs/>

9

## Potential PFAS Contamination in CA



<https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule#3>  
 Hu XC, et al., 2016. Detection of PFASs in US drinking water linked to industrial sites, military fire training areas, and waste water treatment plants. *Env Sci and Tech Letters* 3(10):344–350

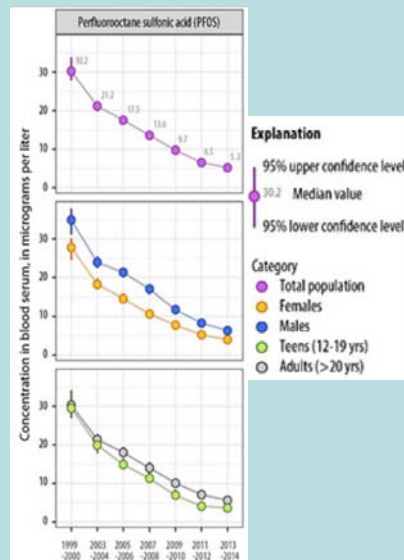
## EPA Actions

- ❖ Reduce contamination
- ❖ National Data Collection and assessment
- ❖ Health Guidance
- ❖ PFAS Action Plan
- ❖ Research and Development

11

## EPA – PFAS Reduction

- ❖ Worked with manufacturers to phase out production since 2000
- ❖ Blood levels of both PFOS and PFOA have steadily decreased in the U.S. residents since CDC testing began in 1999



12

## EPA – Data Collection

Related to Drinking Water Systems -

- ❖ Collects national occurrence data
  - 6 PFAS monitored under Unregulated Contaminant Monitoring Rule (UCMR3) in 2013:
  - Additional PFAS under UCMR5 to be finalized by 2020
- ❖ Maintains national database for evaluation and research

13

## EPA – Health Guidance

- ❖ Issued lifetime health advisories in drinking water:
  - 70 parts per trillion (ppt) for PFOA and PFOS, either singly or combined.
- ❖ Intends to establish a drinking water legal limit i.e. Maximum Contaminant Level (MCL) for PFOA & PFOS
- ❖ Published multi-media, multi-program, national research and communication plan in February 2019

14

## EPA – Research & Development

### ❖ Treatment Technologies:

- Activated carbon adsorption
- Ionic exchange resins
- High pressure membrane filtration (e.g., reverse osmosis/RO)
- Point-of-Use (POU) home filtration system

### ❖ Analytical Methods

- 537.1 – More analytes and lower reporting limits

15

## CA – Health Guidelines

### ❖ Issued guidance - July '18:

- Notification level (NL):
  - 14 ppt for PFOA
  - 13 ppt for PFOS
- Response level (RL):
  - 70 ppt combined for PFOA & PFOS

16

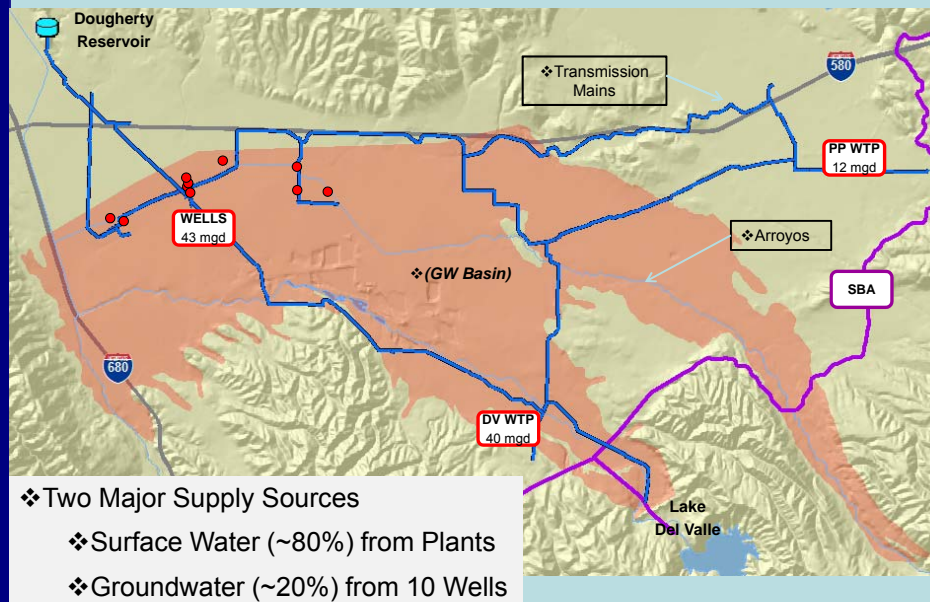


## CA – 3 Phase Investigation Plan

- ❖ Launched state-wide Investigation Plan – Mar '19
  - Phase I: Airports, landfills (incl. 3 in Livermore & Pleasanton), impacted drinking water sources (incl. Zone 7)
  - Phase II: Primary manufacturing facilities, refineries, non-airport fire training sites, 2017-2018 wildfire areas
  - Phase III: Secondary manufacturing sites, wastewater treatment plants, domestic wells

17

## Zone 7 Water System



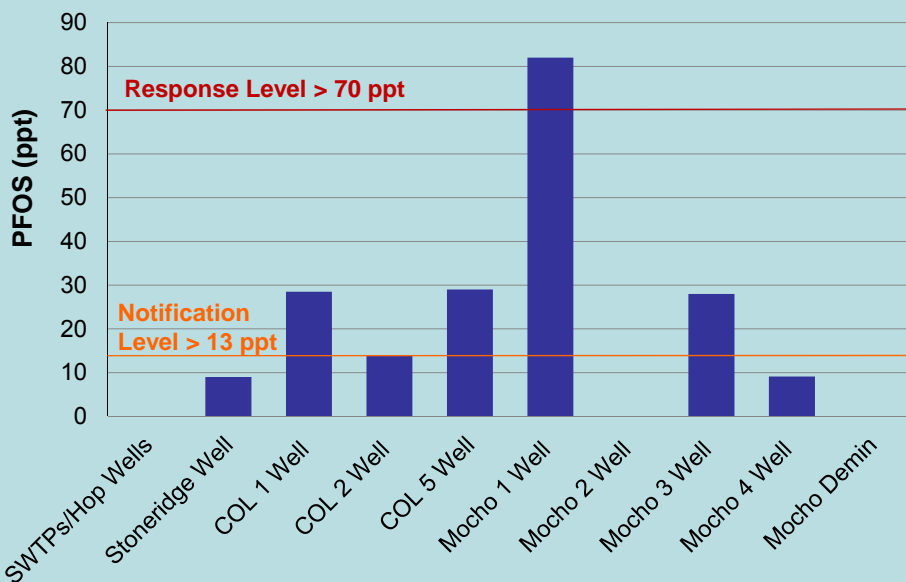
## Zone 7 PFAS Monitoring

### ❖ Proactive monitoring:

- Monitored for 6 PFAS at representative sources in 2013 per UCMR3
  - Supplemental monitoring as Zone 7 being a wholesaler was exempt from monitoring.
  - None detected – Method Reporting Limits (MRLs) were much higher than current method (~10-45x higher)
- Monitored for 14 PFAS at all sources (Nov '18 – Jan '19)
  - PFOA & PFOS detected at some groundwater wells.
  - MRLs are much lower (2 ppt)
  - Other PFAS detected, but no regulatory guidelines available

19

## Zone 7 Average PFOS (Nov '18 – Jan '19)



20

## Zone 7 Completed Actions

- ❖ Implemented procedures to reduce PFOS < Response Level (RL) @ Mocho wellfield
  - Treat Mocho 1 through RO at Mocho Groundwater Demineralization Plant (MGDP)
    - Removal efficiency > 95%
  - Blend untreated Mocho 1 with other water sources:
    - Untreated Mocho 2, 3 or 4
    - Treated (RO permeate) from MGDP
- ❖ Notified DDW, Zone 7 Board, Retailers & direct customers
- ❖ Posted PFAS Information on Zone 7 website

21

## Zone 7 Planned Actions

- ❖ Conducting quarterly monitoring per State directive
- ❖ Recent PFOS monitoring data will be included in 2018 Consumer Confidence Report
- ❖ Groundwater monitoring & investigation to determine source(s) of contamination
  - PFAS sampling will be done as part of the spring 2019 groundwater quality sampling effort
- ❖ Continue to provide as-needed support to Retailers
- ❖ Continue to monitor PFAS regulatory & research development

22

**Questions?**

23