

PFAS Source and Drinking Water Investigations in California

ACWA MID-YEAR MEETING

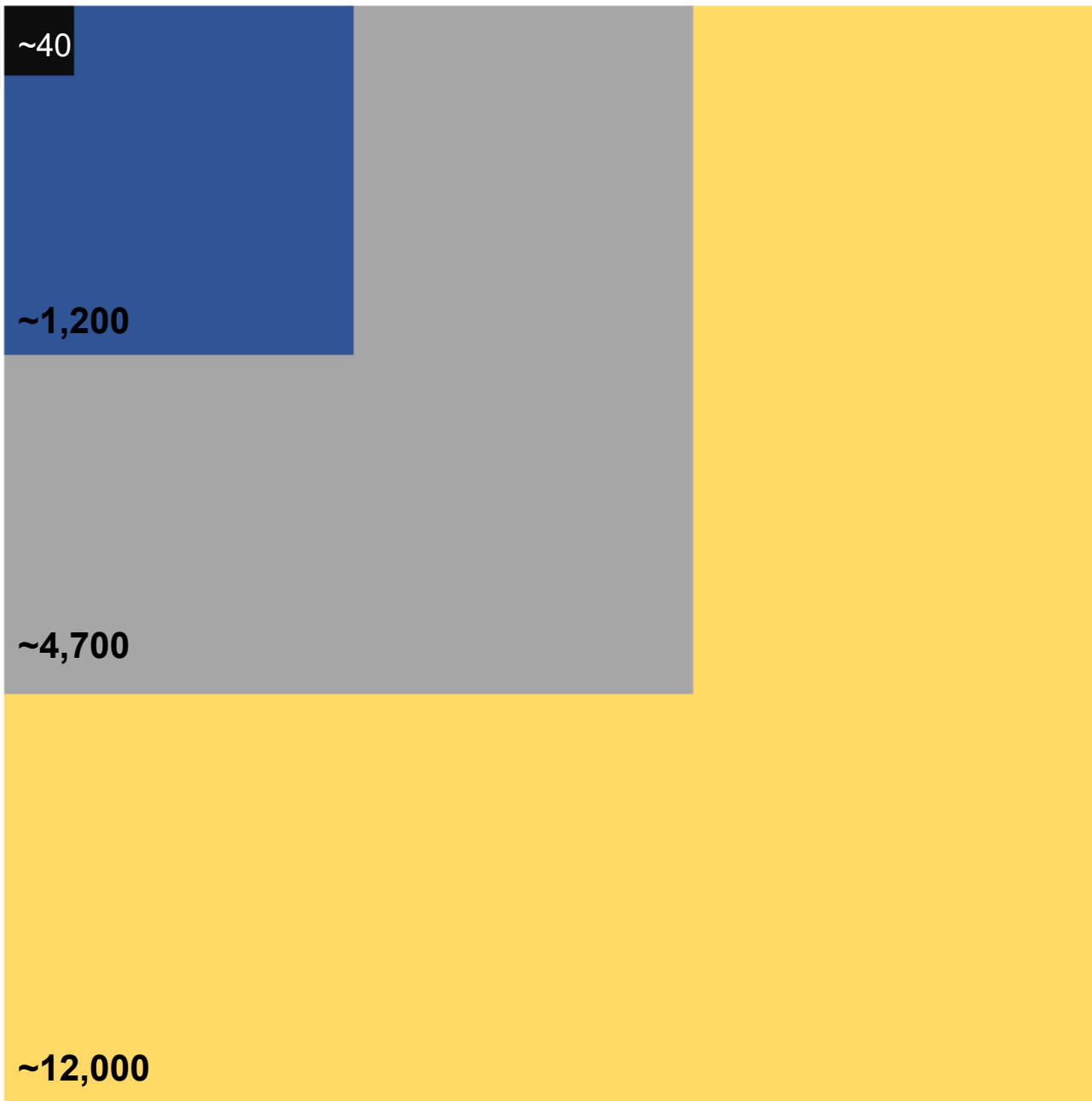
March 14-15, 2023

Karen Mogus
Deputy Director for Water Quality
CA Water Resources Control Board



California's Coordinating Agencies on PFAS





Perspective on the PFAS Class

- USEPA Analytical Methods
- Non-Target Analysis (NTA)
- OECD* Global PFAS Database
- US EPA PFAS Master Description (August 2022)

*Organization for Economic Cooperation and Development

Wide Range of Historical PFAS Uses



Class B Firefighting Foam



Carpets, Rugs, Textiles



Non-Stick Cookware



Metal Plating



Tech Industry



Food Packaging

PFAS Cause Multiple Adverse Effects

Immune toxicity

PFOA, PFOS

Cancer

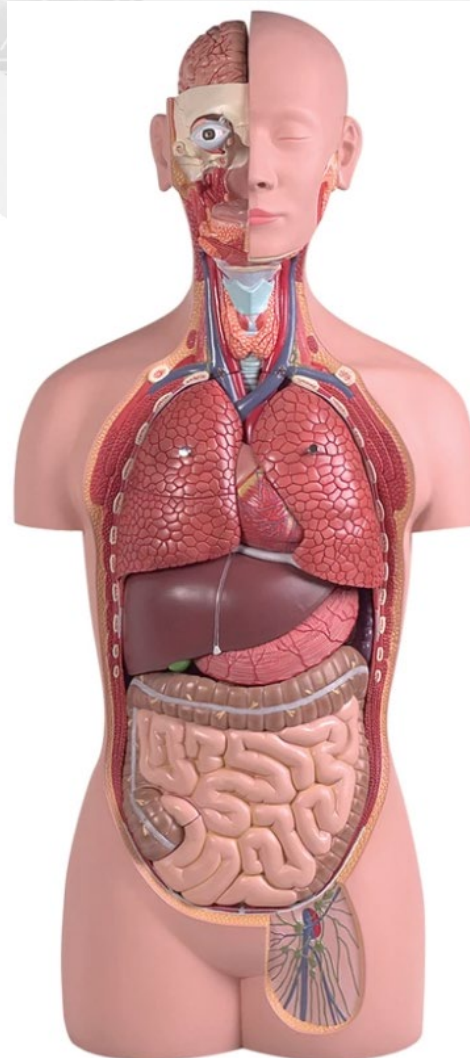
PFOA, PFOS

Liver toxicity

PFOA, PFOS, PFHxS, PFBS

Developmental toxicity

PFOA, PFOS, PFHxS, PFBS



Thyroid toxicity

PFOA, PFOS, PFHxS, PFBS

Cardiovascular toxicity

PFOA

Kidney toxicity

PFOA, PFBS

Reproductive toxicity

PFOA, PFOS, PFNA, PFBS

Water Board Statewide PFAS Investigative Orders



Airports
(2019)



Municipal Solid
Waste Landfills
(2019)



Chrome Plating
Facilities
(2019)



Bulk Fuel
Terminals/
Refineries
(2021)

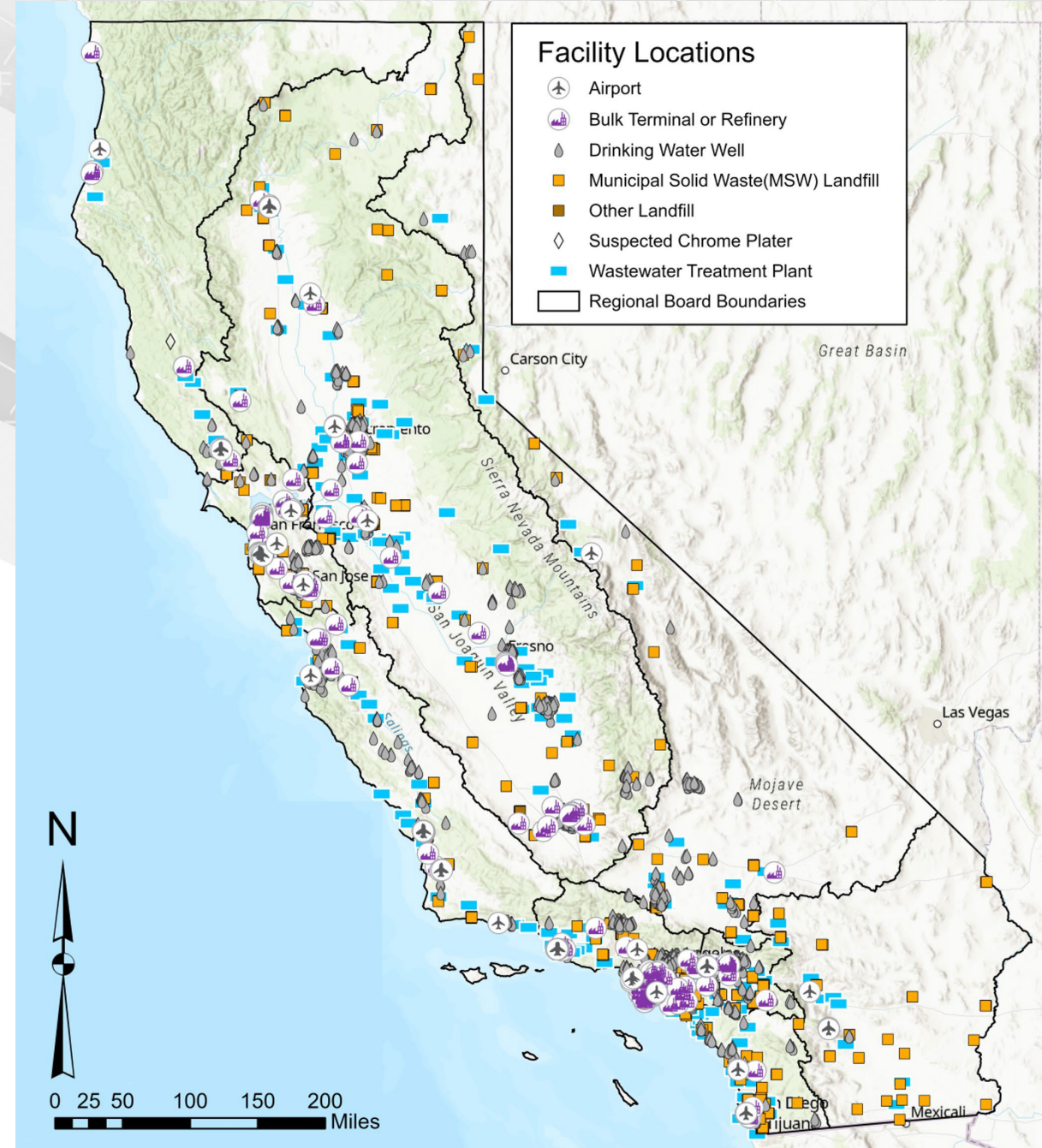


Publicly Owned Treatment Works (2020)



Public Water Systems (~~2019~~, ~~2020~~, ~~2021~~, 2022)

Occurrence of PFAS is Being Gathered Statewide



2021 PFOA/PFOS - Drinking Water Supply Wells

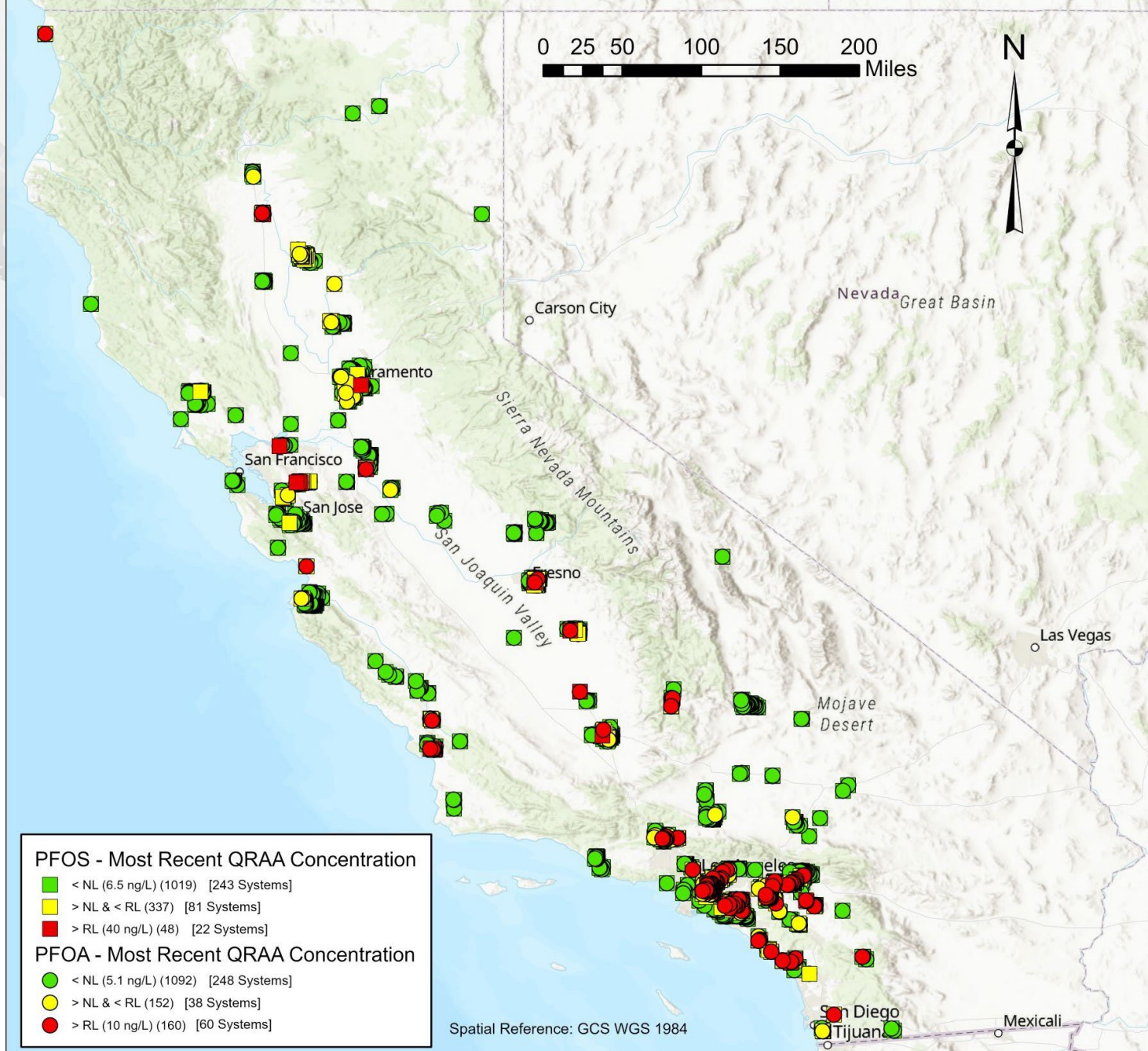
Data downloaded in February 2022 – raw water results

NL = Notification Level; QRAA = Quarterly Running Annual Average

RL = Response Level

PFOA and PFOS analyzed using EPA Method 537.1

PFOA: = NL = 5.1 ng/L, RL = 10 ng/L | PFOS: NL = 6.5 ng/L, RL = 40 ng/L

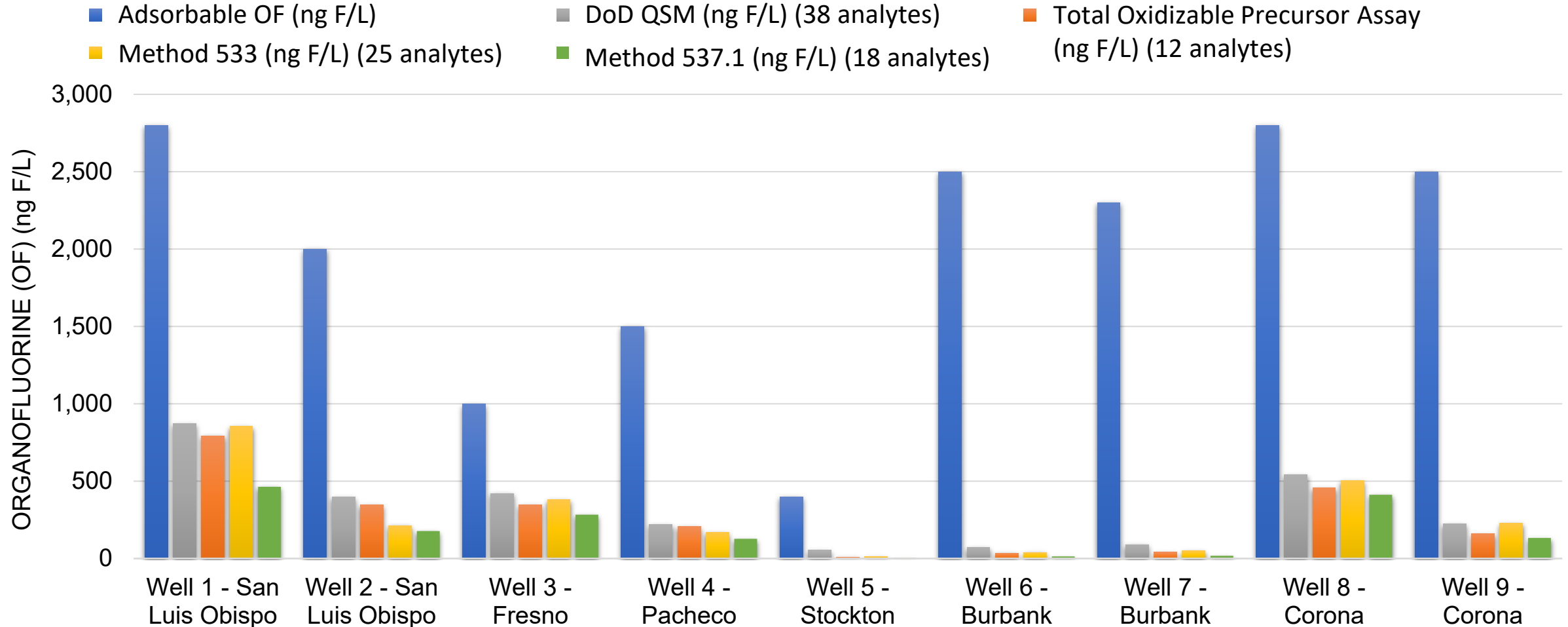


AB-178 (Budget Act of 2022)

1. Develop and validate a **broad-spectrum test method** for the class of PFAS
2. Monitor all community public water systems in the state at least once, with state funding directed to accomplish **PFAS testing** of community public water systems serving disadvantaged and severally disadvantaged communities*
3. Develop a **treatment-based regulation** for the entire class of PFAS

*Approximately 4,000 wells in California

There is more PFAS in our drinking water than conventional targeted approaches can report.



GEOTracker PFAS MAP

PFAS SAMPLING LOCATIONS

- ☒ Locations with PFAS Investigative Orders
 - ☒ Airport
 - ☒ Bulk Fuel Terminal/Refinery
 - ☒ Chrome Plating
 - ☒ Landfill
 - ☒ Wastewater Facilities
- ☒ Other Locations with PFAS Data
 - ☒ Cleanup Program Site
 - ☒ Land Disposal Site
 - ☒ Military Cleanup Site
 - ☒ Military Privatized Site
 - ☒ Non-Case Information
 - ☒ Project
 - ☒ Sampling Point - Private
 - ☒ WDR Site
 - ☒ NPDES
 - ☒ GAMA - Priority Basin Project (USGS)
 - ☒ GAMA - Water Replenishment District
- ☒ Water System Wells - GAMA DATA
 - ☒ Drinking Water Wells

PFAS Chemical Filter

Chemical:
Perfluorooctanoic sulfonate (PFOS)

Wells to Show:
Any Result

GROUNDWATER - NG/L:

ND LOW HIGH

DRINKING WATER WELLS - NG/L:

ND LOW HIGH

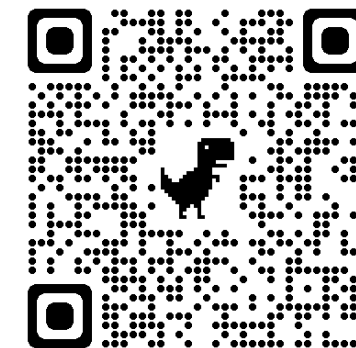
SOIL - UG/KG:

ND LOW HIGH

Matrix

☐ Gas ☒ Liquid ☐ Solid

GeoTracker PFAS Map



https://geotracker.waterboards.ca.gov/map/pfas_map



DATA SUMMARY - 2883 SAMPLE POINTS FOUND - EXPORT / EXPORT STATEWIDE					
VALUES TO SHOW: <input type="radio"/> MAX VALUES <input checked="" type="radio"/> MOST RECENT VALUES					
TYPE	RECENT VAL	COMPLIANCE VALUE	UNITS	DATE	MATRIX
●	=255000	n/a	NG/L	4/6/2022	Liquid
●	=220000	n/a	NG/L	3/10/2021	Liquid
●	=120000	n/a	NG/L	3/10/2021	Liquid
●	=120000	n/a	NG/L	3/10/2021	Liquid
●	=78000	n/a	NG/L	3/10/2021	Liquid
●	=78000	n/a	NG/L	3/10/2021	Liquid
●	=72000	n/a	NG/L	10/24/2019	Liquid
●	=68000	n/a	NG/L	5/21/2020	Liquid
●	=55000	n/a	NG/L	10/22/2019	Liquid

Williams

Keyboard shortcuts Map data ©2022 Google, INEGI 50 km

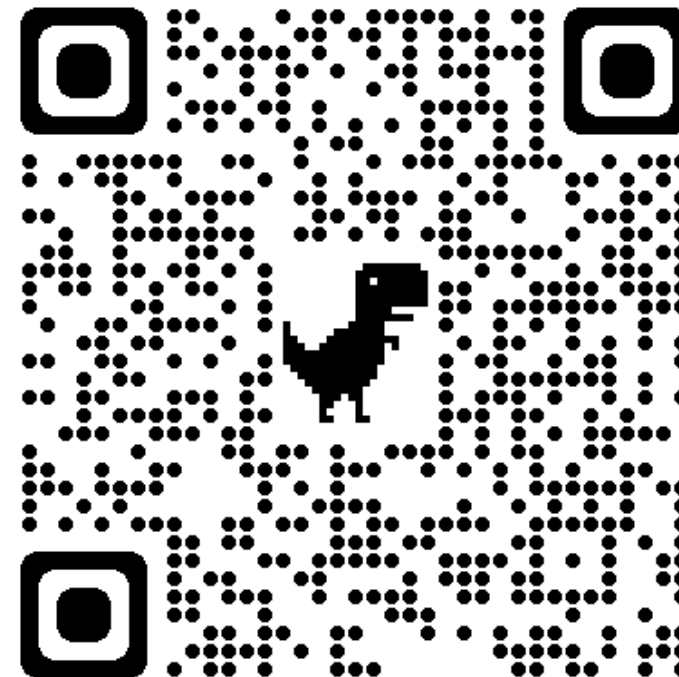
Thank you!

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Water Board's' PFAS Website