

Characterizing PFAS in California's Drinking Water, Groundwater, and Wastewater

25TH CALIFORNIA UNIFIED PROGRAM
ANNUAL TRAINING CONFERENCE

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Divisions of Drinking Water and Water Quality

California's Coordinating Agencies on PFAS

BIOMONITORING
CALIFORNIA



~40

~1,200

~4,700

~12,000

Perspective on the PFAS Class

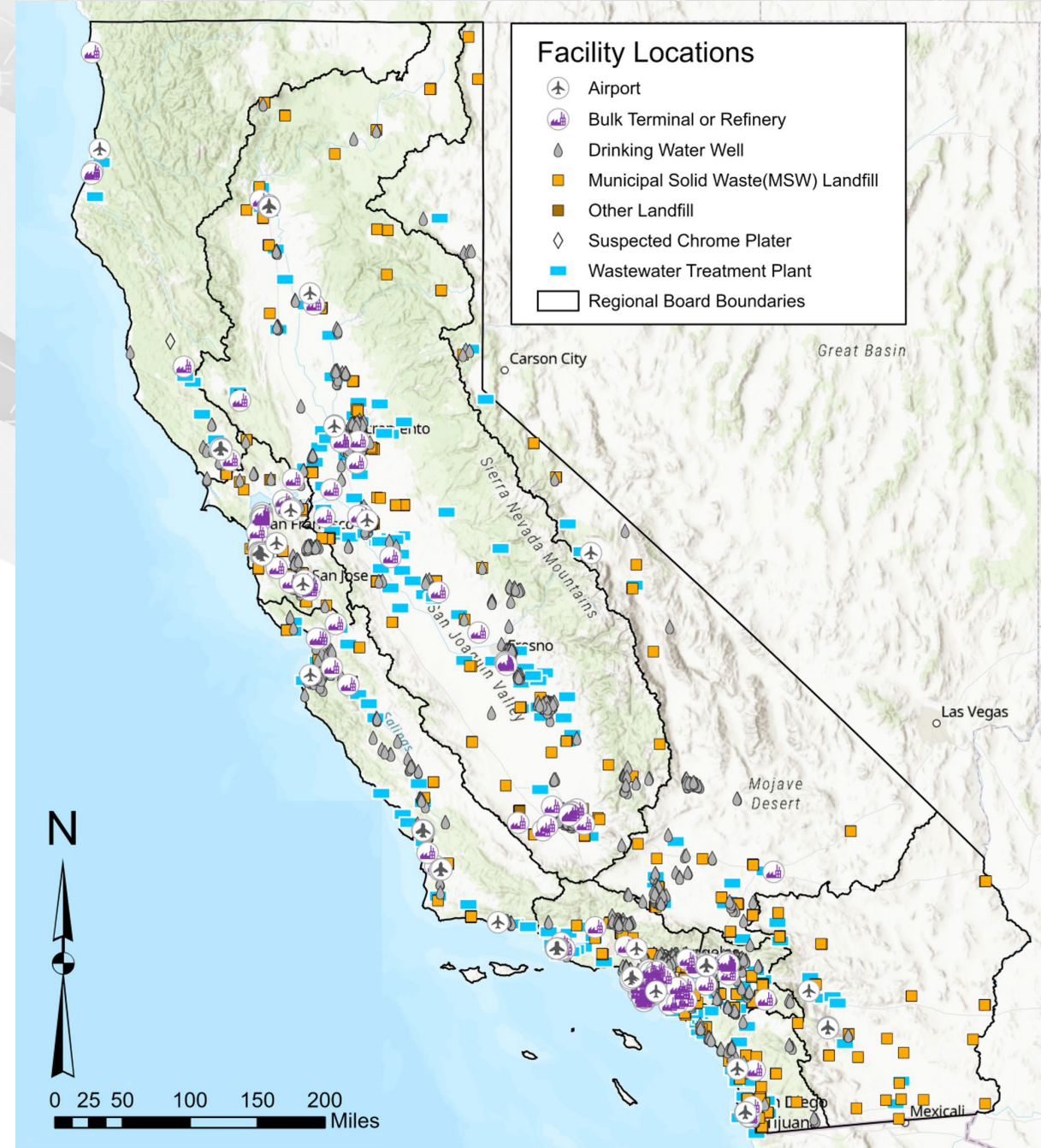
- USEPA Analytical Methods
- Non-Target Analysis (NTA)
- OECD* Global PFAS Database
- US EPA PFAS Master Description (August 2022)

*Organization for Economic Cooperation and Development

Water Board Statewide PFAS Investigative Orders



Occurrence of PFAS is Being Gathered Statewide

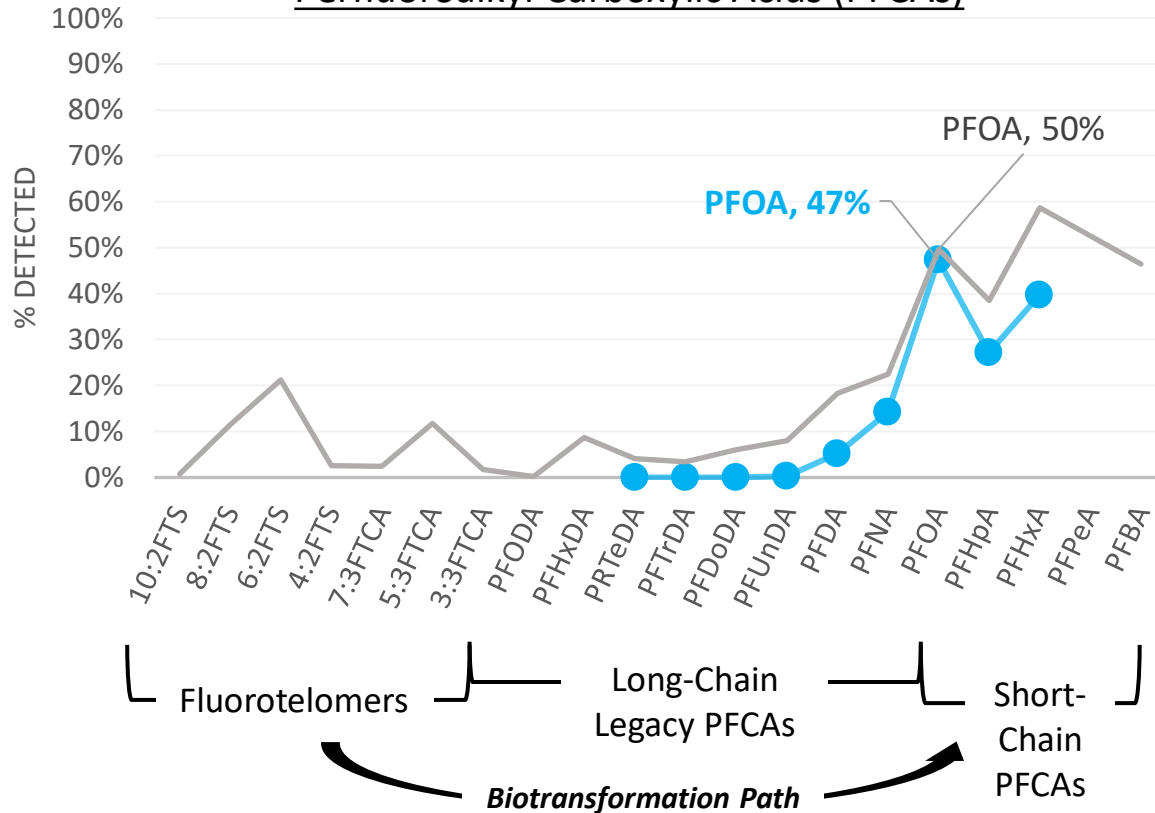


Statewide Shorter Chain PFAS are being Detected Predominantly

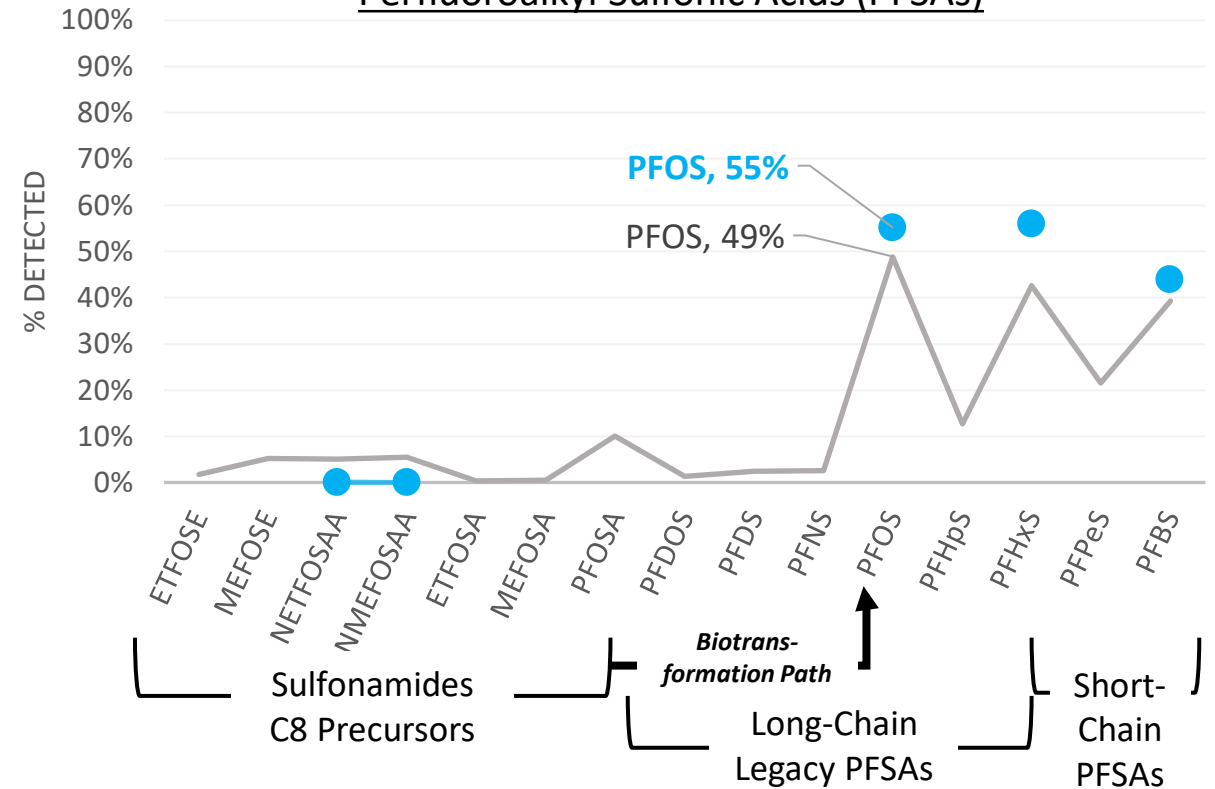
● Drinking Water (EPA Method 537.1 - 18 analytes)

— Non-Drinking Water (DoD QSM - up to 38 analytes)

Fluorotelomers to Perfluoroalkyl Carboxylic Acids (PFCAs)

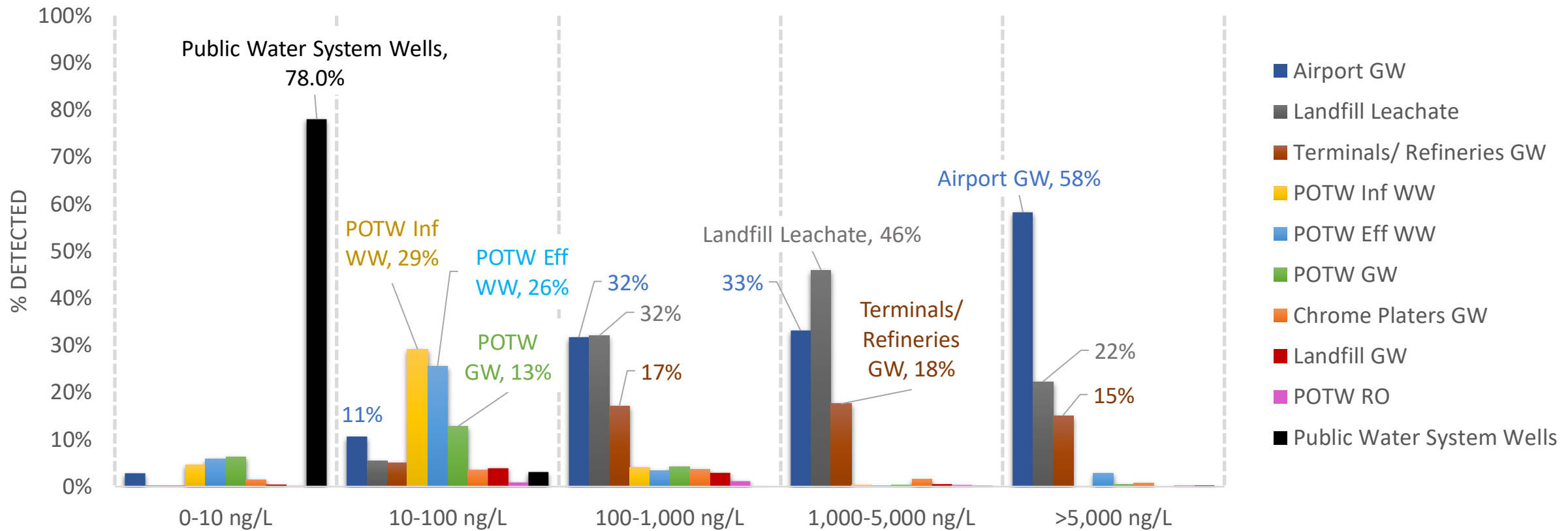


Sulfonamides to Perfluoroalkyl Sulfonic Acids (PFSA)



Data downloaded from GeoTracker from Feb 2022 to Sept 2022.

Low Concentrations of PFAS observed at Higher Frequency in Public Water Supply vs Industrial sites



Data downloaded from GeoTracker from Feb 2022 to Feb 2023. Detected analytes only. Percentages >10% are labeled.

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



Division of Drinking Water General Orders

PREVIOUS

March 2019 (~600 wells)

- Adjacent to March 2019 DWQ orders (landfills and airports)
- Resampled wells based on EPA's UCMR3 detections
- 4 quarters of sample by EPA Method 537.1 (18 analytes)

September 2020 (~900 wells)

- Expands outward from previous detections
- Incorporates AB756 H&S Code 116378 requirements
- Ongoing quarterly sampling (started 4Q2020)

March 2021 (~off base 340 wells)

- Adjacent to DoD bases (military is sampling military owned wells)
- Ongoing quarterly sampling (started 2Q2021)

October 2022 (1,296 wells)

CURRENT

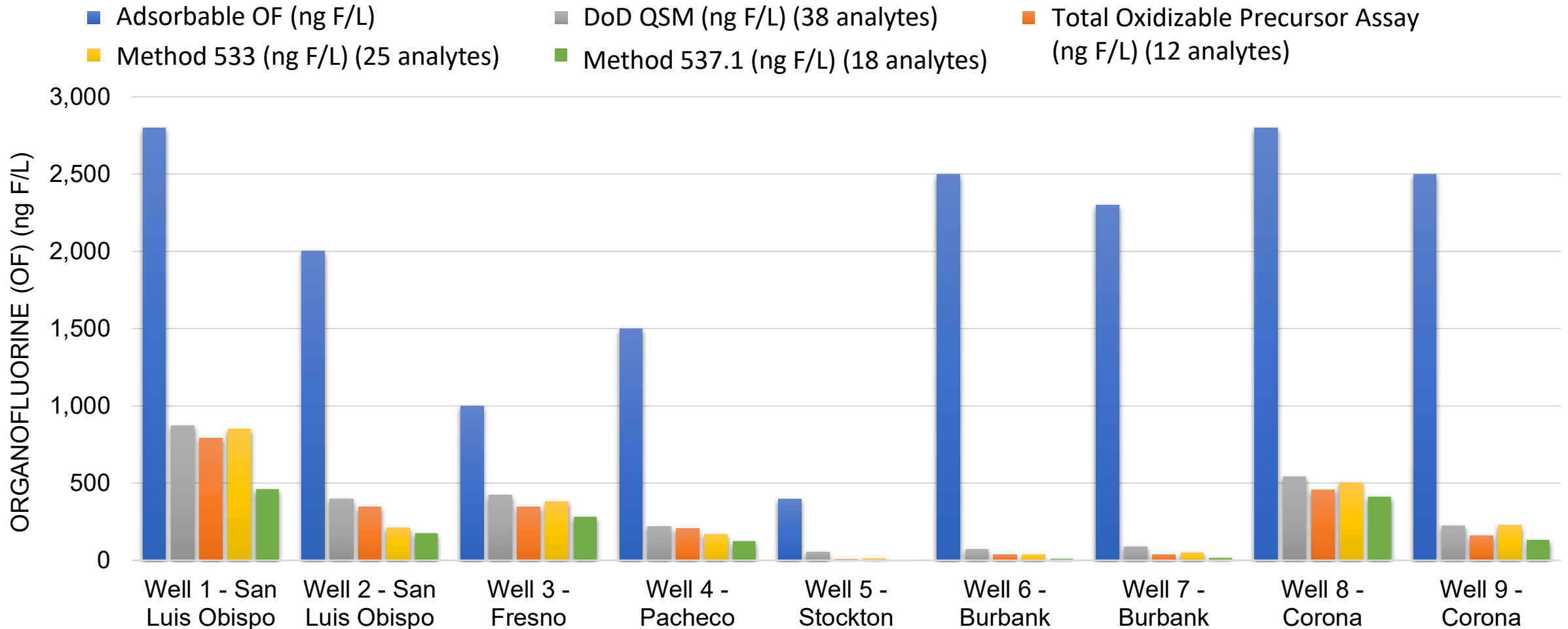
- Replaces previously issued Orders
- Switches to a broader suite of PFAS analytes (EPA Method 533 – 25 analytes)
- Expands outward from detections in previous Orders
- Includes wells in the vicinity of chrome platers, bulk fuel terminals, refineries, fire training areas
- Includes surface intakes along 2 major rivers and near selected bio-spreading areas
- Requires ongoing quarterly sampling (starting 1Q2023)

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:

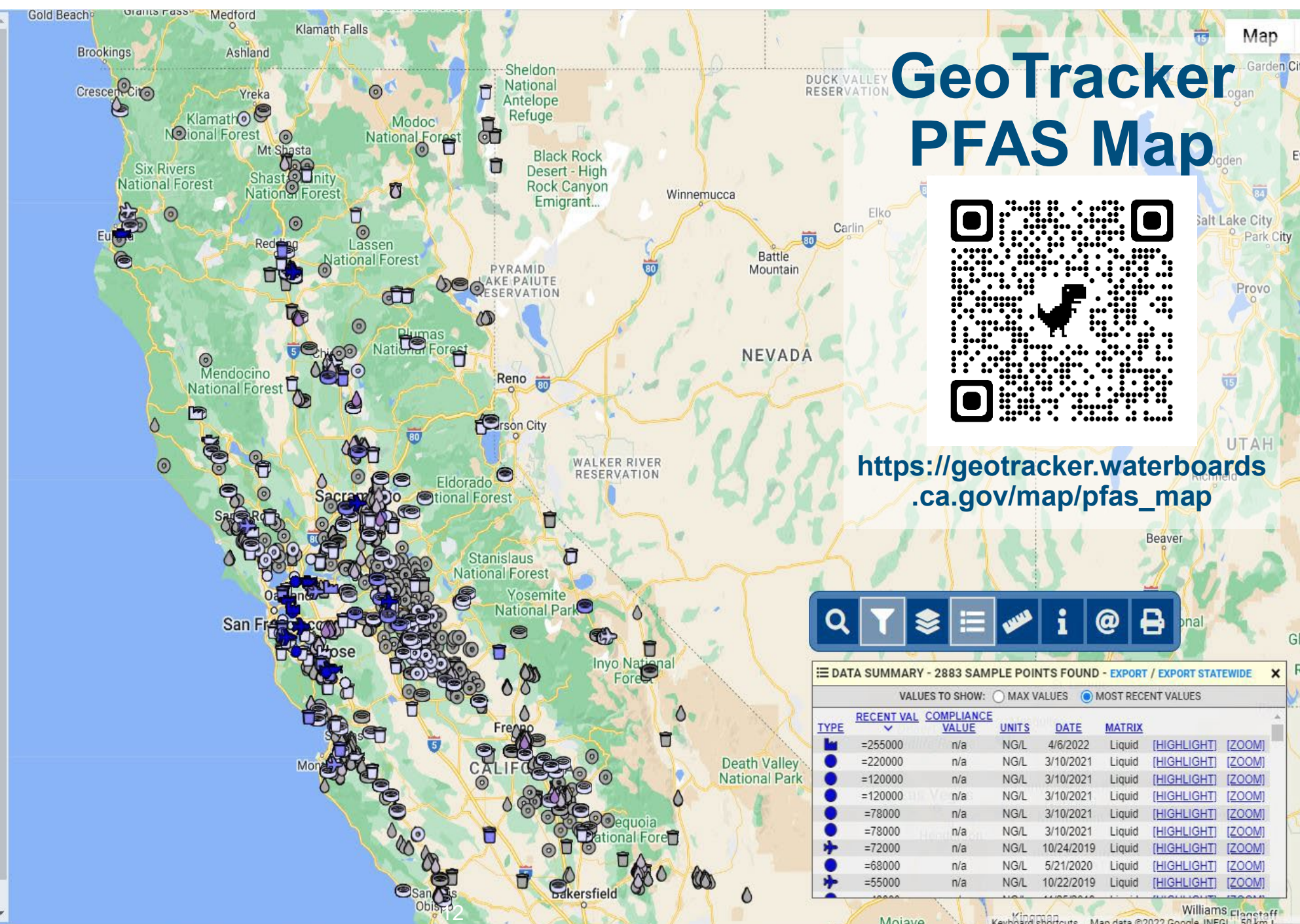
ND LOW HIGH

SOIL - UG/KG:

ND LOW HIGH

Matrix

Gas Liquid Solid



GeoTracker PFAS Map



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

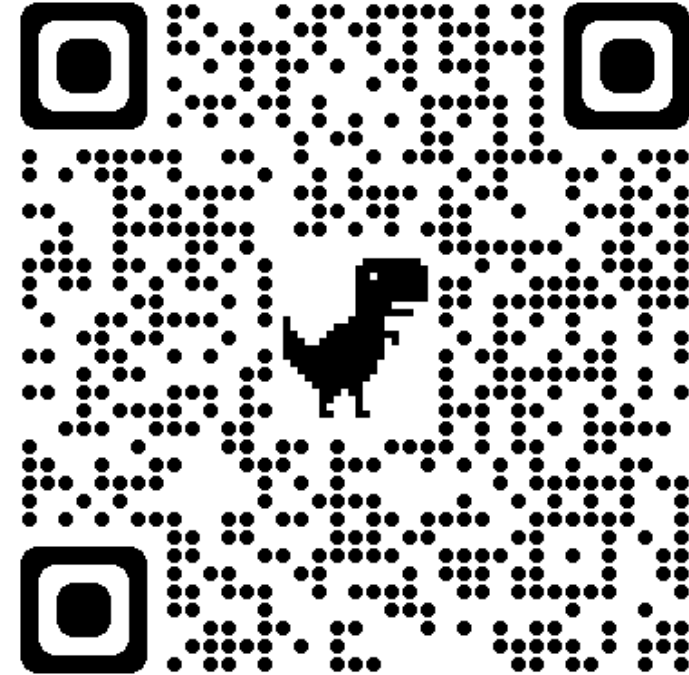


Map navigation toolbar and data summary table.

Thank you!

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Water Board's' PFAS Website