Overview of Regional Board PFAS Source Investigations

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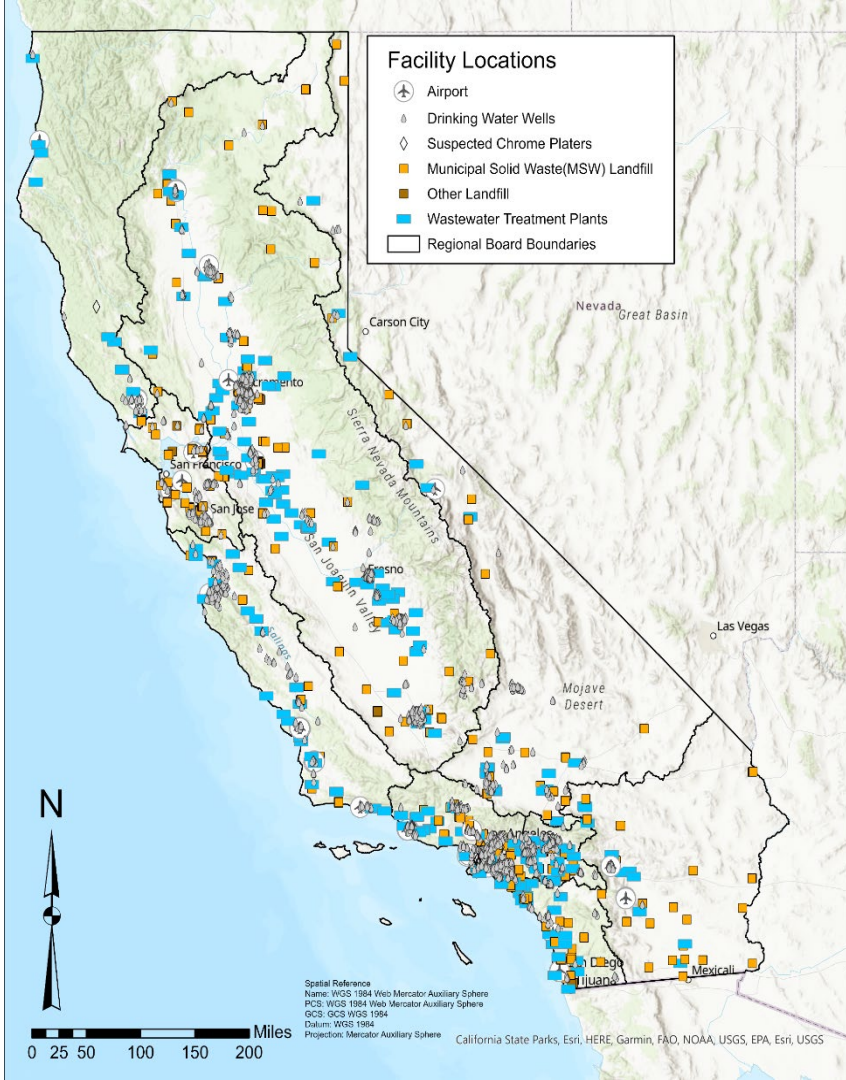
Presentation to the
SAWPA Emerging Constituents Program Task Force
October 31, 2022

California Water Boards

Statewide PFAS Investigations

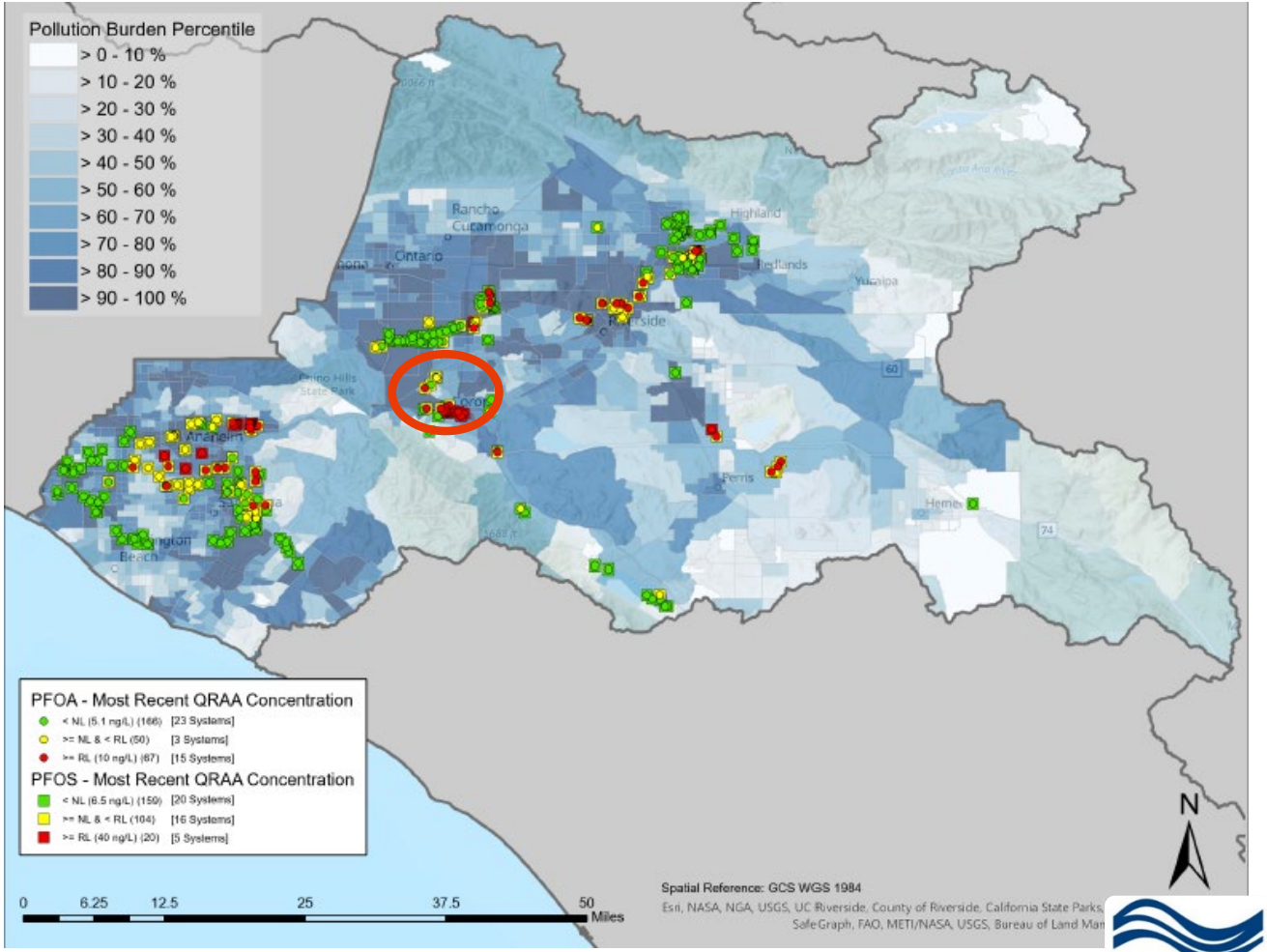
- Since 2019, investigative orders were issued to the following industries:
  - Municipal solid waste landfills
  - Commercial airports
  - Suspected chromium plating facilities
  - Wastewater treatment plants
  - Refineries and bulk terminals
  - Drinking water supply wells
  - Considering issuing orders to fire training areas



Drinking Water Supply Wells PFOA/PFOS > NLs/RLs

Data downloaded in February 2022:

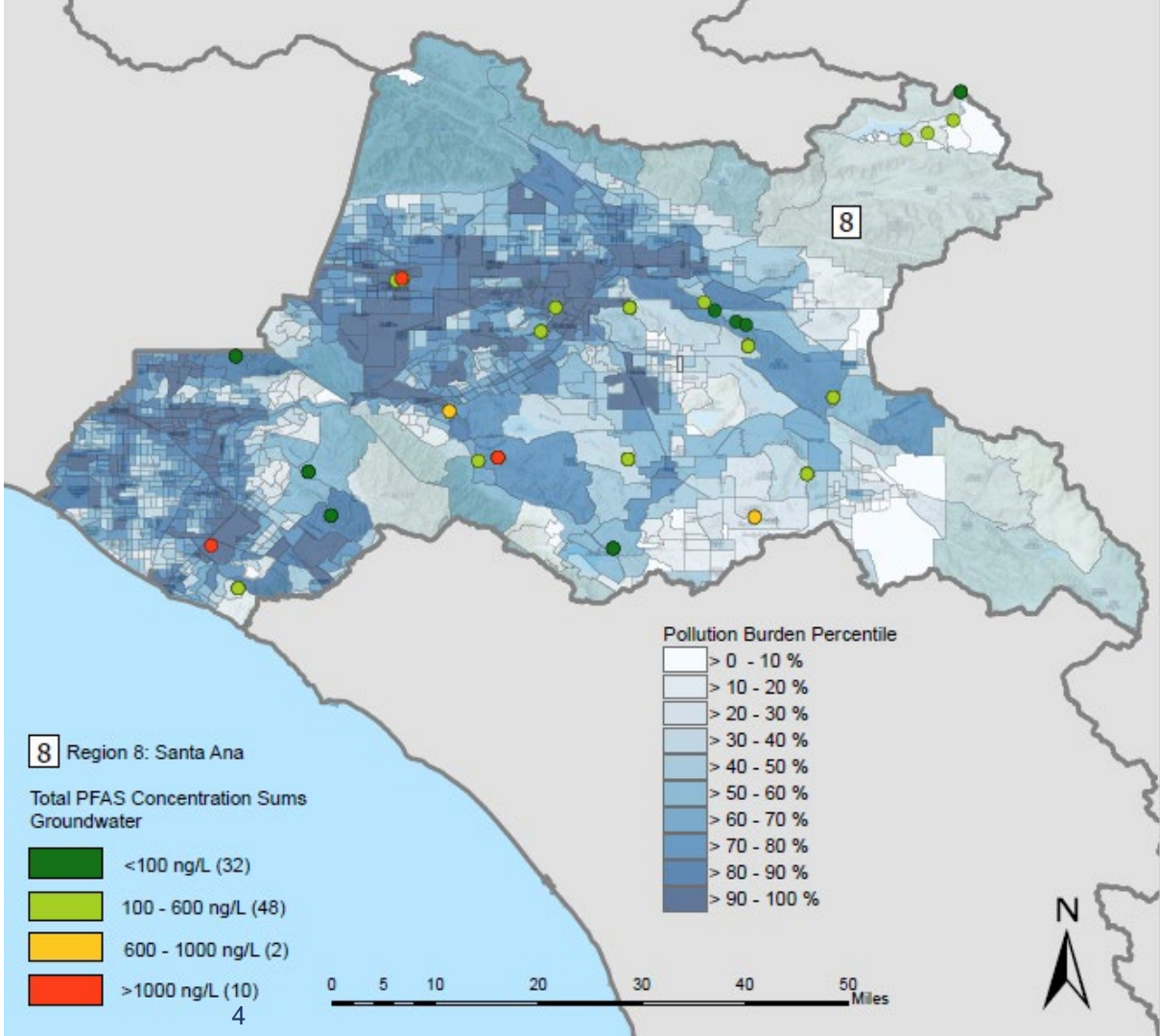
- Raw water results
- QRAA = Quarterly Running Annual Average
- PFOA and PFOS analyzed using EPA Method 537.1
- PFOA: NL = 5.1 ng/L, RL = 10 ng/L
- PFOS: NL = 6.5 ng/L, RL = 40 ng/L



Total PFAS in Groundwater – Initial Observations

Data downloaded in February 2022:

- Airports and Landfills
- Pollution Burden Percentiles from CalEnviroScreen V4.0
- Total PFAS sums based on DoD QSM (25 to 38 analytes)



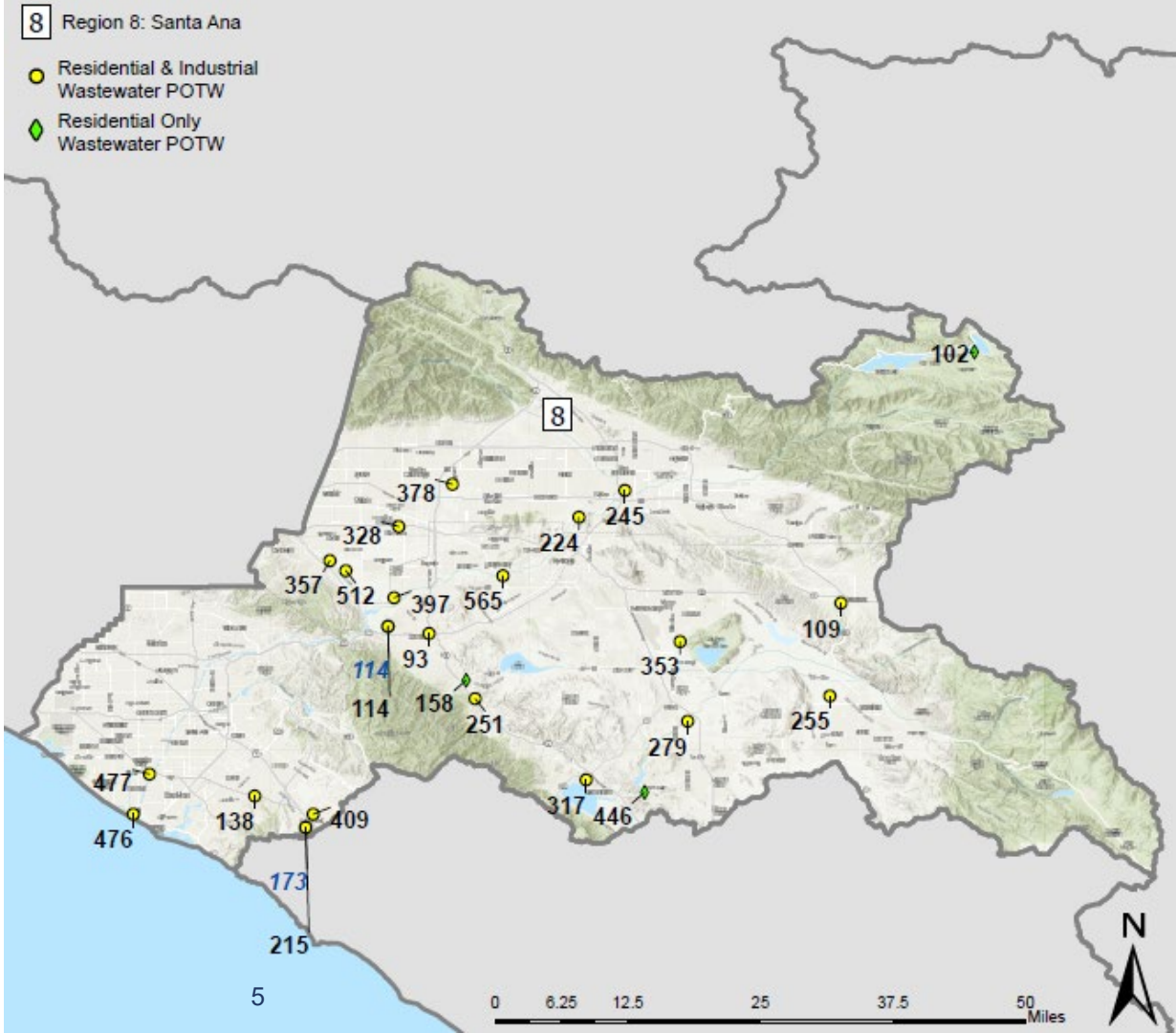
Average of Total PFAS in Effluent of WWTPs

Average total PFAS range: 93 to 565 ppt

Average Detections:
PFOA: 15.2 ppt
PFOS: 8.2 ppt

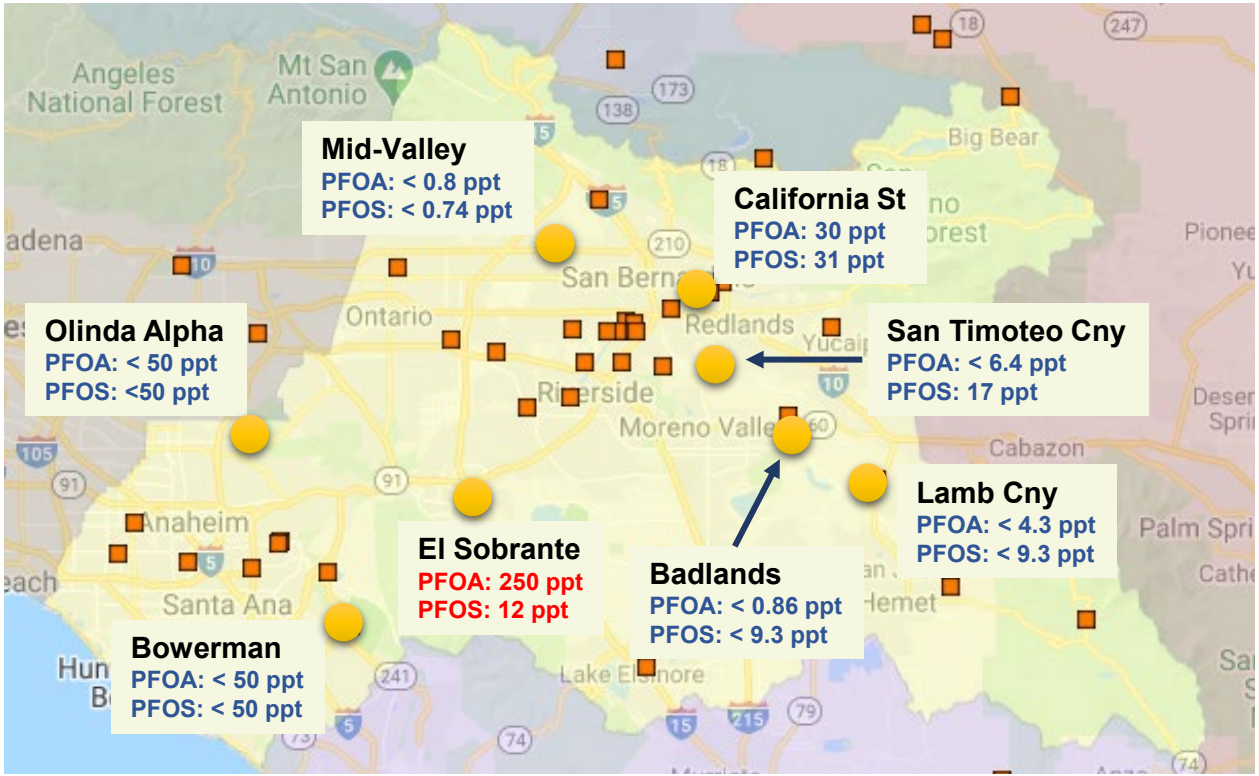
Maximum Detections:
PFOA: 38 ppt
PFOS: 231 ppt

Samples were analyzed using method compliant with the DoD QSM with 25 to 38 analytes.



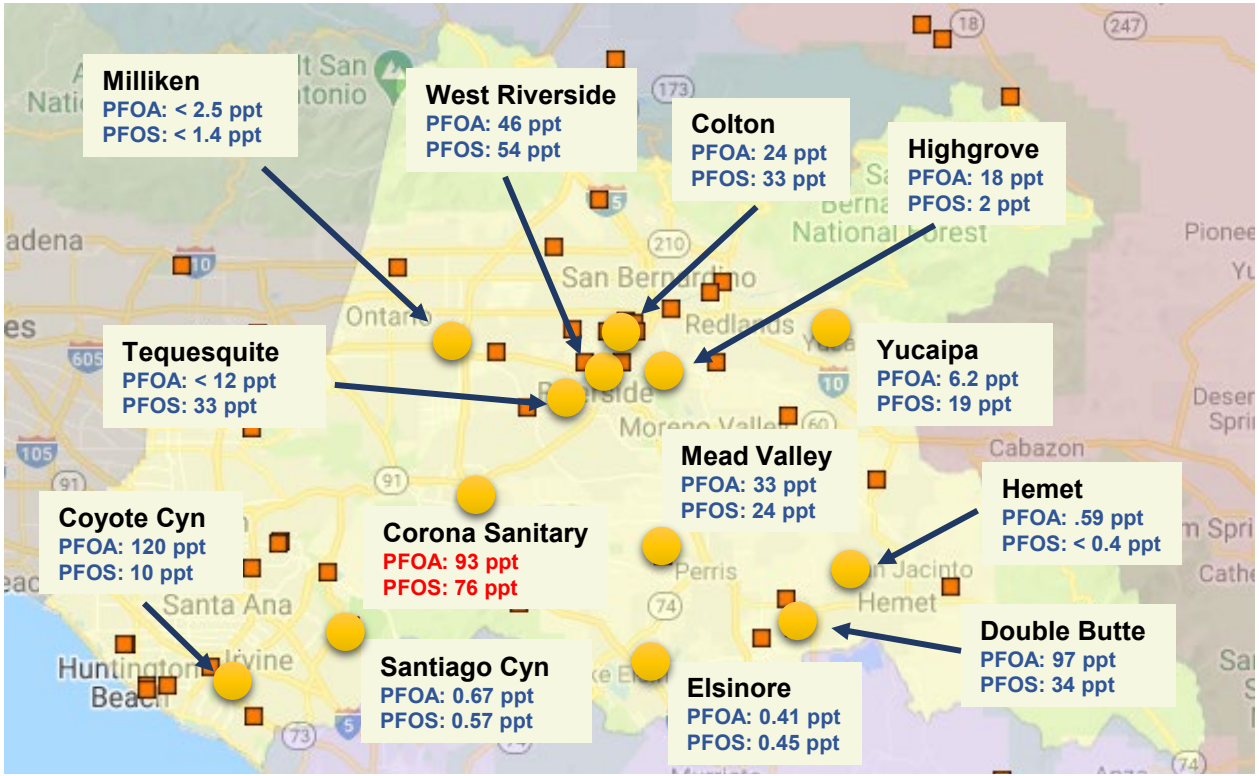
Maximum PFOA/PFOS Detections Groundwater - Active Landfills

- Drinking water NLs
  - PFOA: 5.1 ppt
  - PFOS: 6.5 ppt
- Drinking water RLs
  - PFOA: 10 ppt
  - PFOS: 40 ppt



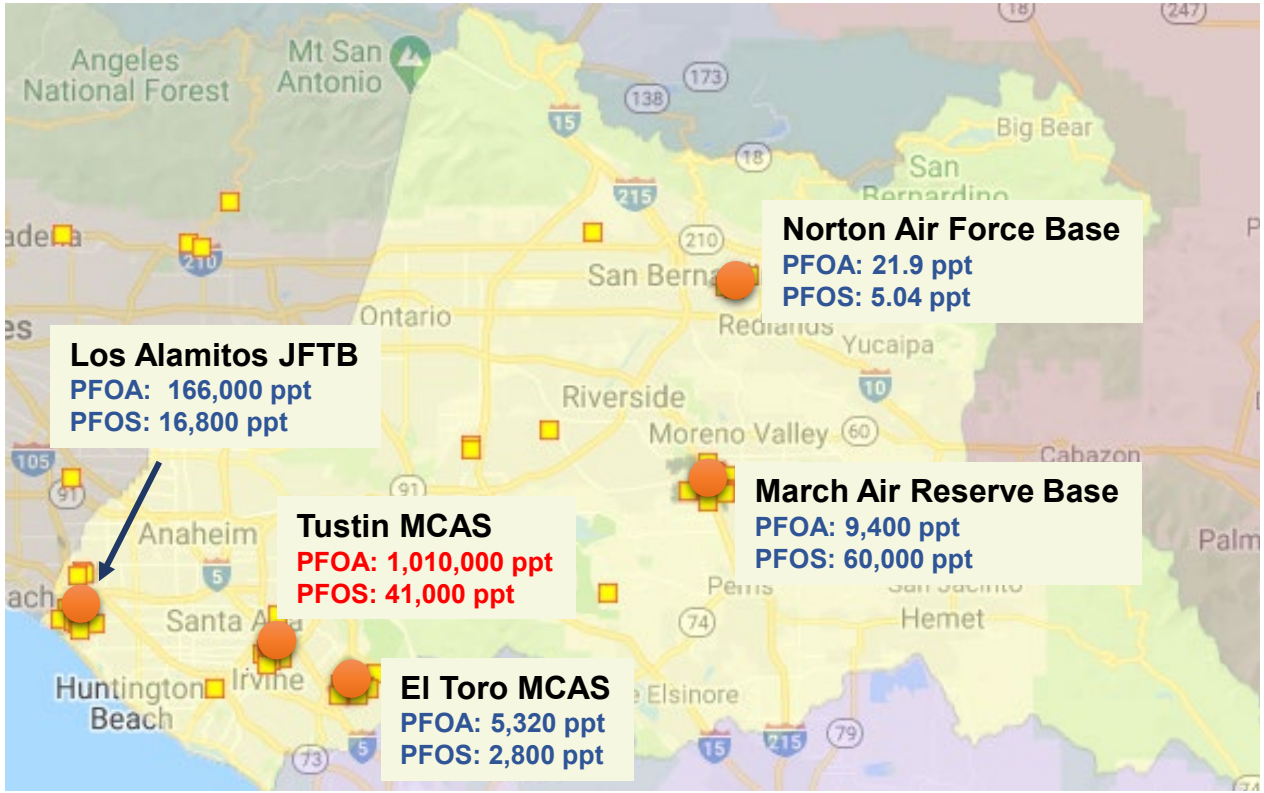
Maximum PFOA/PFOS Detections Groundwater – Closed Landfills

- Drinking water NLs
  - PFOA: 5.1 ppt
  - PFOS: 6.5 ppt
- Drinking water RLs
  - PFOA: 10 ppt
  - PFOS: 40 ppt



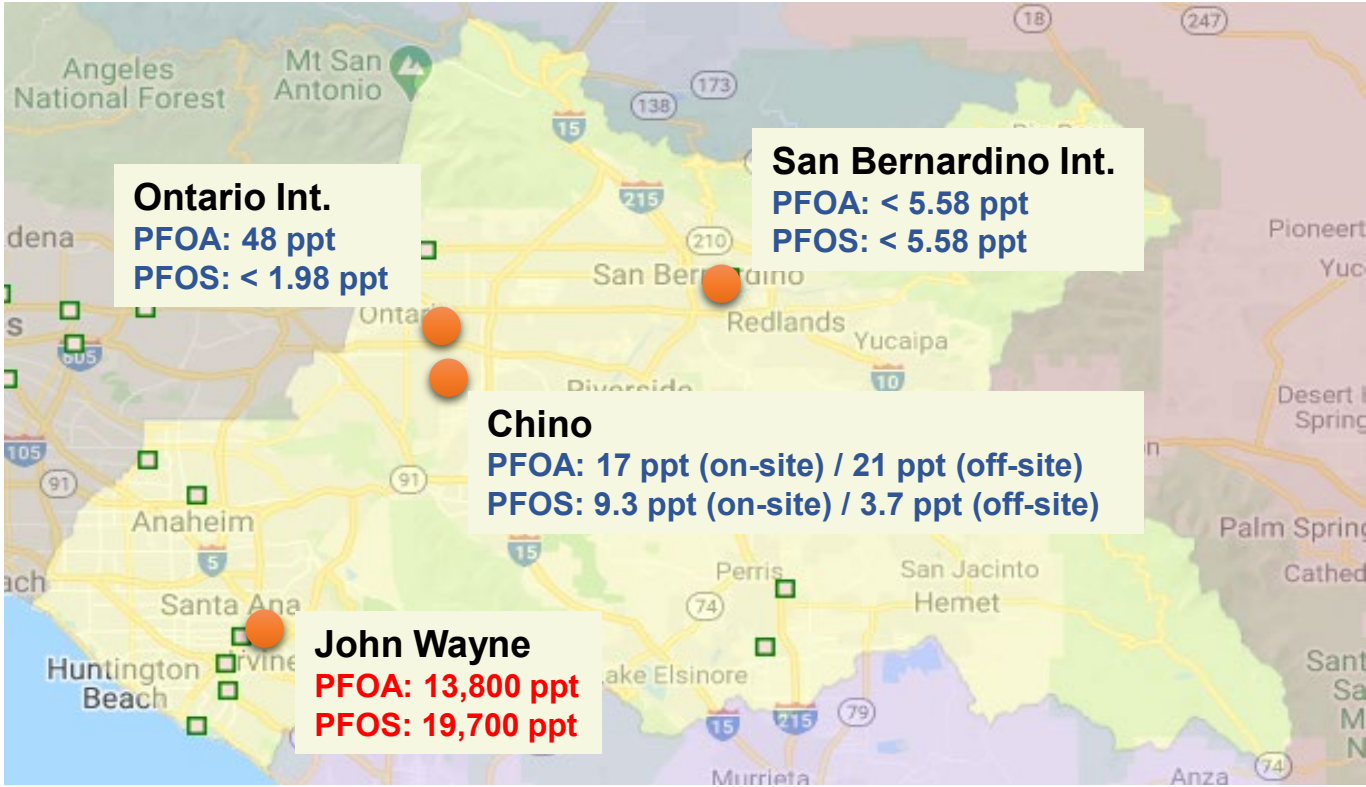
Maximum PFOA/PFOS Detections Groundwater - Military Sites

- Drinking water NLs
  - PFOA: 5.1 ppt
  - PFOS: 6.5 ppt
- Drinking water RLs
  - PFOA: 10 ppt
  - PFOS: 40 ppt



Maximum PFOA/PFOS Detections Groundwater - Airports

- Drinking water NLs:
  - PFOA: 5.1 ppt
  - PFOS: 6.5 ppt
- Drinking water RLs:
  - PFOA: 10 ppt
  - PFOS: 40 ppt



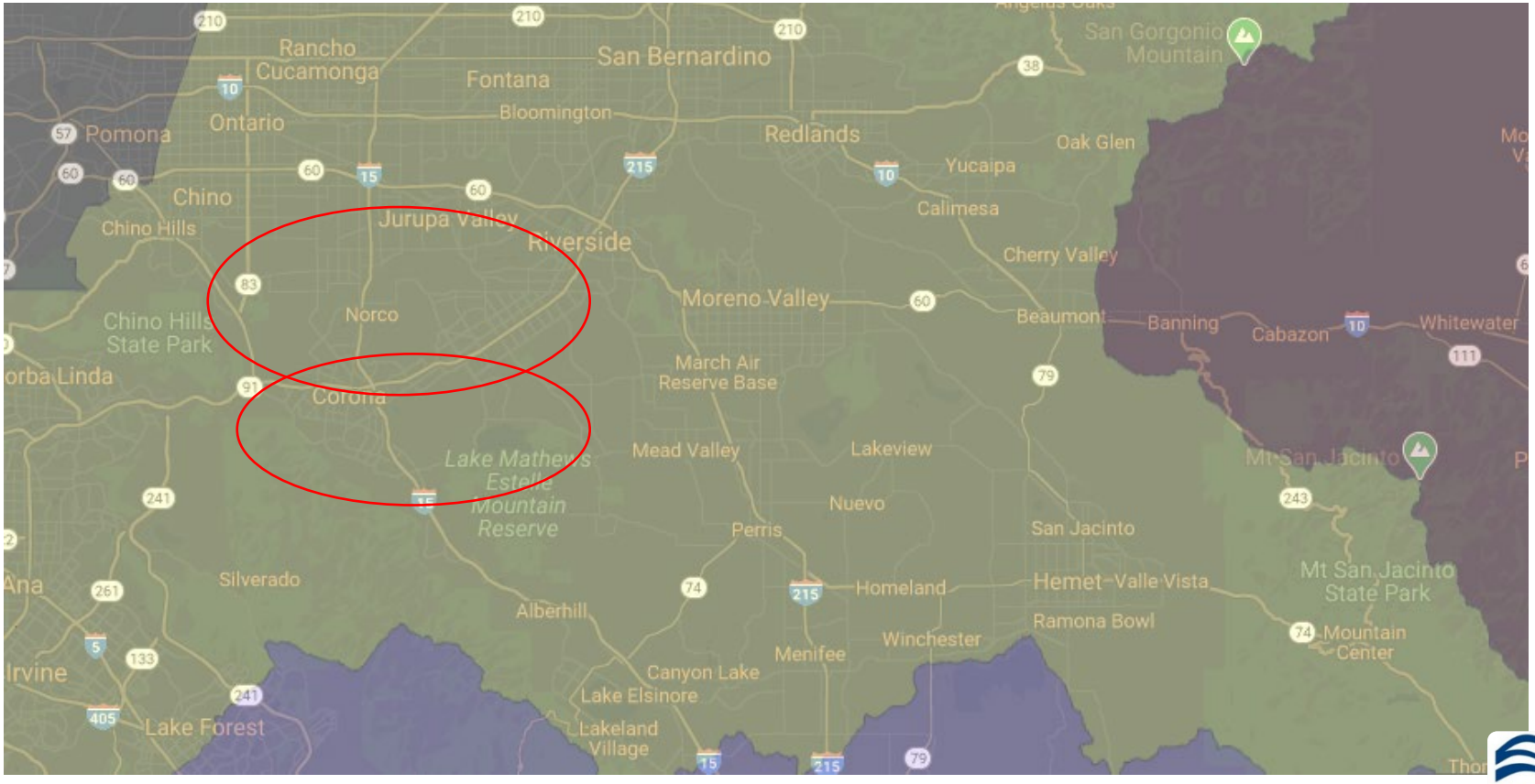
Chromium Plating Facilities

- 42 facilities subject to the statewide Investigation Orders in 2019
  - 5 submitted required work plans
  - 24 submitted initial questionnaire responses and were sent additional extended questionnaires
  - 13 were non-responsive
- Staff is currently reviewing the work plans and questionnaire responses
- Staff is working to address the required PFAS investigation at non-responsive sites

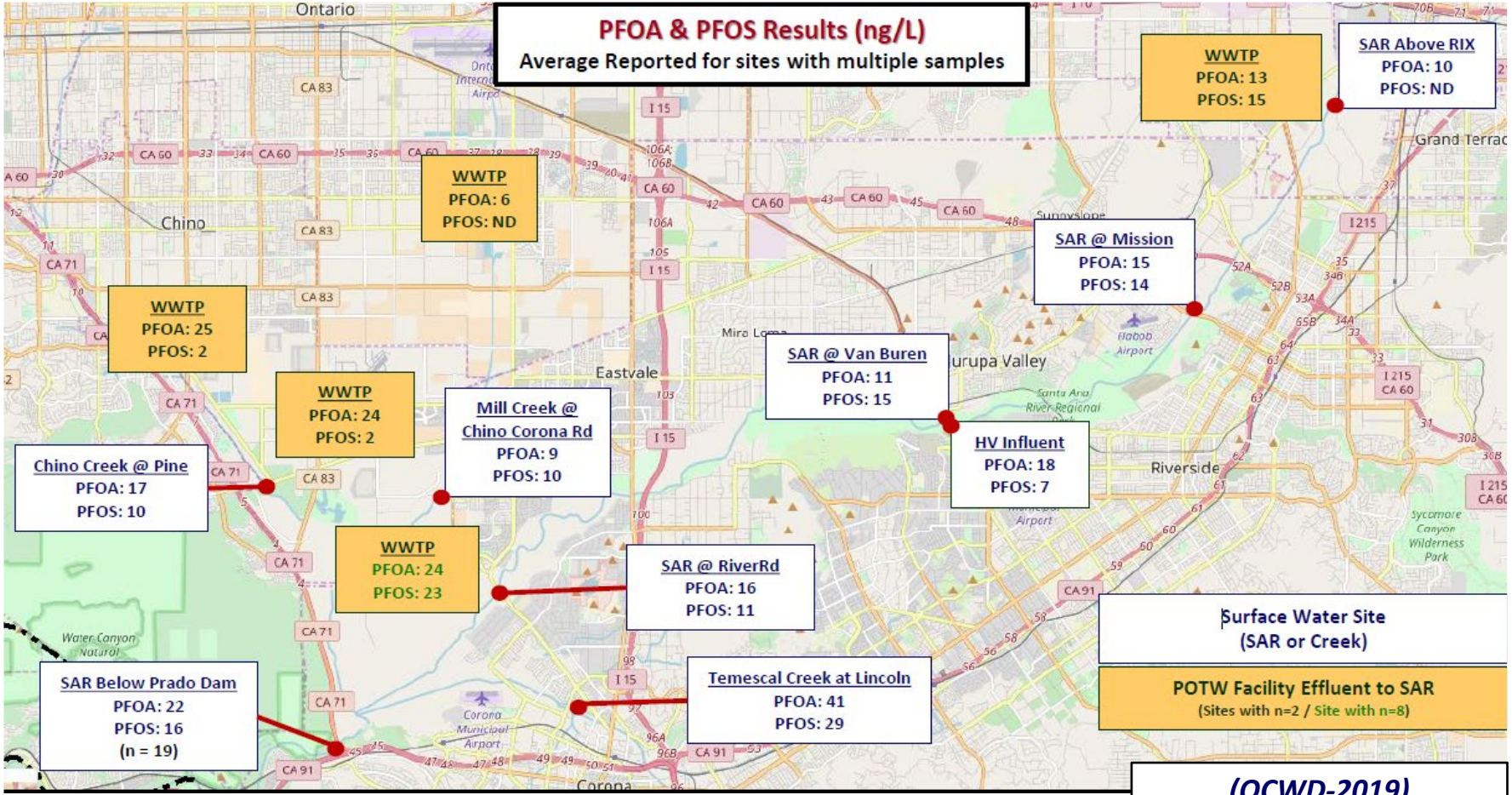
Bulk Fuel Terminals

- 19 facilities were subject to the statewide investigation Orders in 2021
  - 6 submitted work plans
  - 8 submitted other types of responses
  - 5 were non-responsive
- Staff is currently reviewing responses
- Staff is working to obtain additional information about the non-responsive terminals and establish next steps

OCWD PFAS Investigations

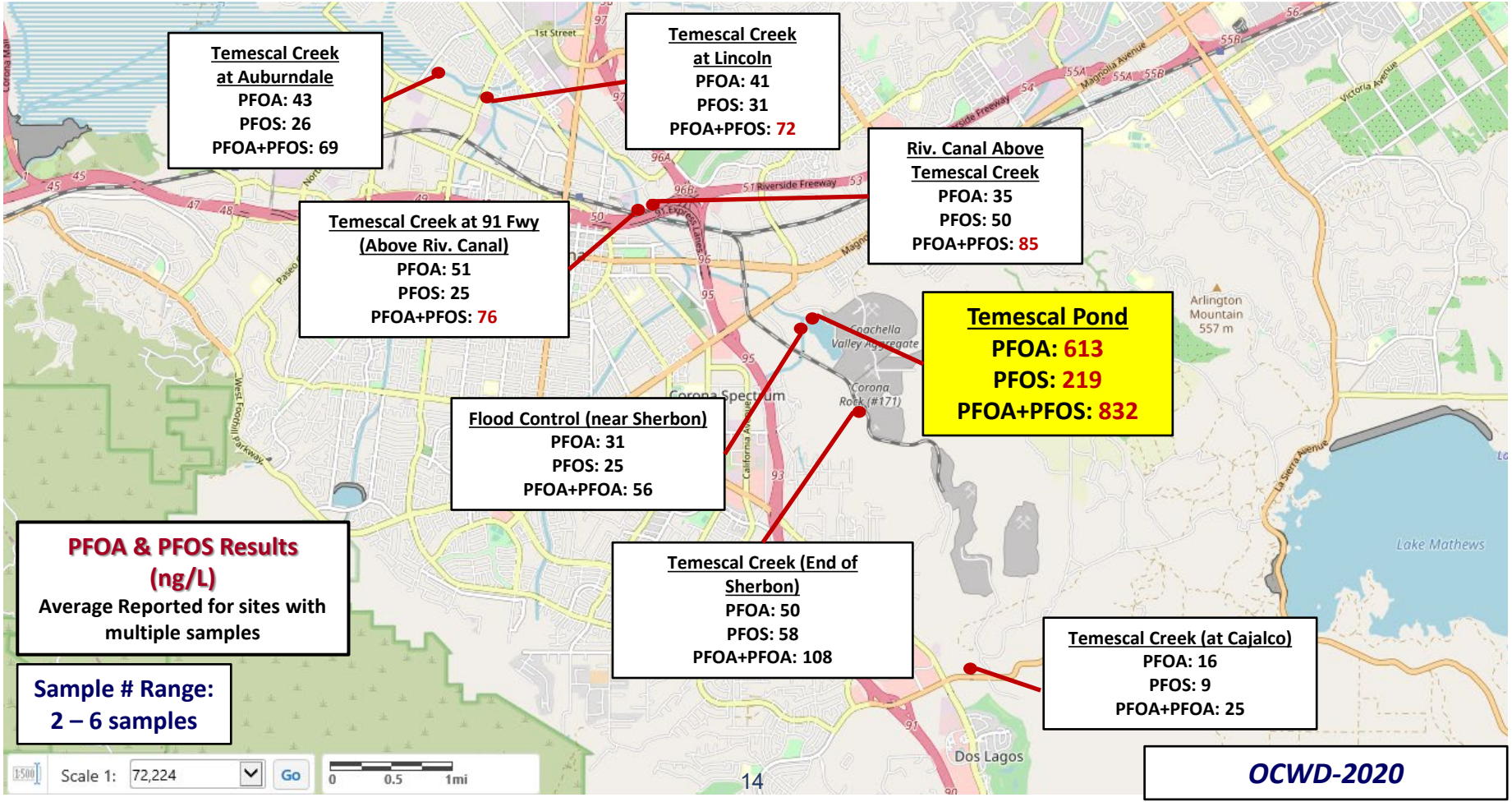


Upper SAR Watershed Monitoring Results



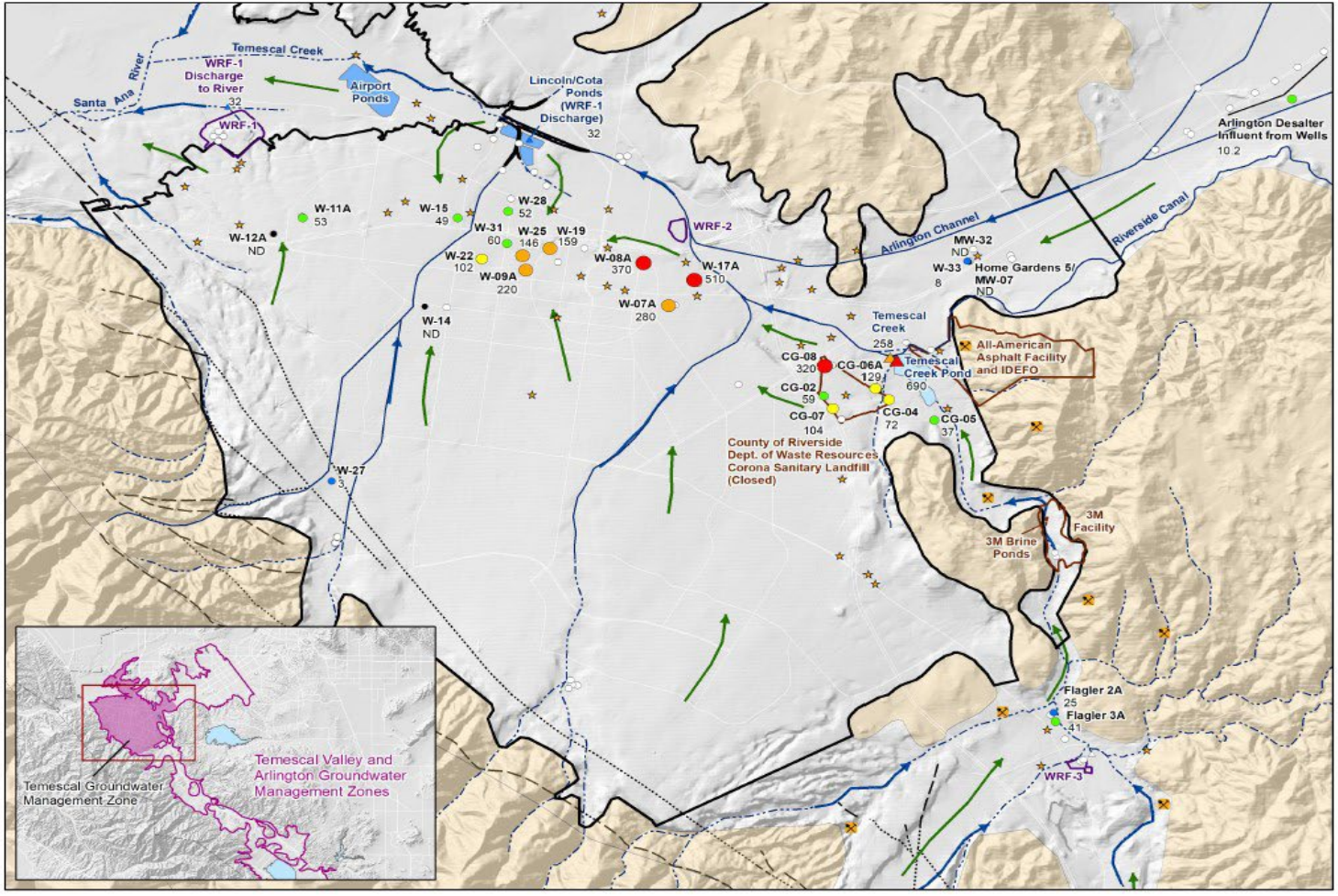
(OCWD-2019)

Temescal Creek Watershed PFAS Results Summary



OCWD-2020

PFOA + PFOS in Surface Water and Groundwater



PFOA + PFOS Concentration (ngl)

Maximum Concentration from a Single Sample Event

- > ND - 35
- > 35 - 70
- > 70 - 140
- > 140 - 280
- > 280
- Non-Detect
- Not Sampled

Symbology is based on the USEPA Health Advisory of 70 ngl for the combned concentration of PFOA and PFOS

Sample Location Type

- Surface Water
- Groundwater

Potential Sources of PFAS

- Site Boundary
- Division of Mine Reclamation Reported Mines (labeled by operator)
- GeoTracker and EnviroStor Sites

Water/Wastewater Infrastructure

- Water Reclamation Facility (WRF)

Groundwater & Surface Water Hydrology

- Generalized Direction of Groundwater Flow
- Generalized Direction of Surface-Water Flow
- Temescal Groundwater Management Zone
- Un-lined Stream Channel
- Concrete-Lined Channel
- Waterbody
- Recycled Water Percolation Pond

Geology

Water-Bearing Sediments

- Quaternary Alluvium

Consolidated Bedrock

- Undifferentiated Pre-Tertiary to Early Pleistocene Igneous, Metamorphic, and Sedimentary Rocks

Faults

- Location Certain
- Location Concealed
- Location Approximate
- Location Uncertain
- Approximate Location of Groundwater Barrier

What Is Next…

Assessment	Assess PFAS at **surface water intakes** along several major rivers in CA	
	Expand **PFAS assessment monitoring** in Stream Pollution Trends Monitoring Program (SPoT) and Surface Water Ambient Monitoring Program (SWAMP)	
Monitoring	Incorporate PFAS **monitoring requirements** into permits	Issue New **Notification Levels and Response Levels**, as necessary
	Incorporate EPA's PFAS **monitoring requirements** into NPDES permits	
Treatment	Continue issuing **new water treatment permits** to public water systems for PFAS removal	

Questions/Comments

Contact:

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Additional Information:

https://www.waterboards.ca.gov/pfas/