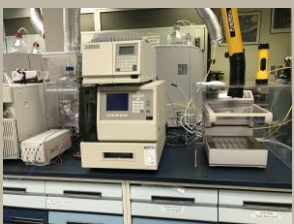
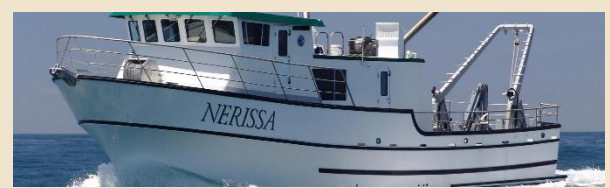


# Challenges and roadblocks adopting new laboratory Accreditation Standards



Ron Coss  
Orange County Sanitation  
District



# Presentation Overview

OCSD Organization & Background

TNI & CA ELAP Accreditation standards

OCSD TNI & CA ELAP preliminary Audit results

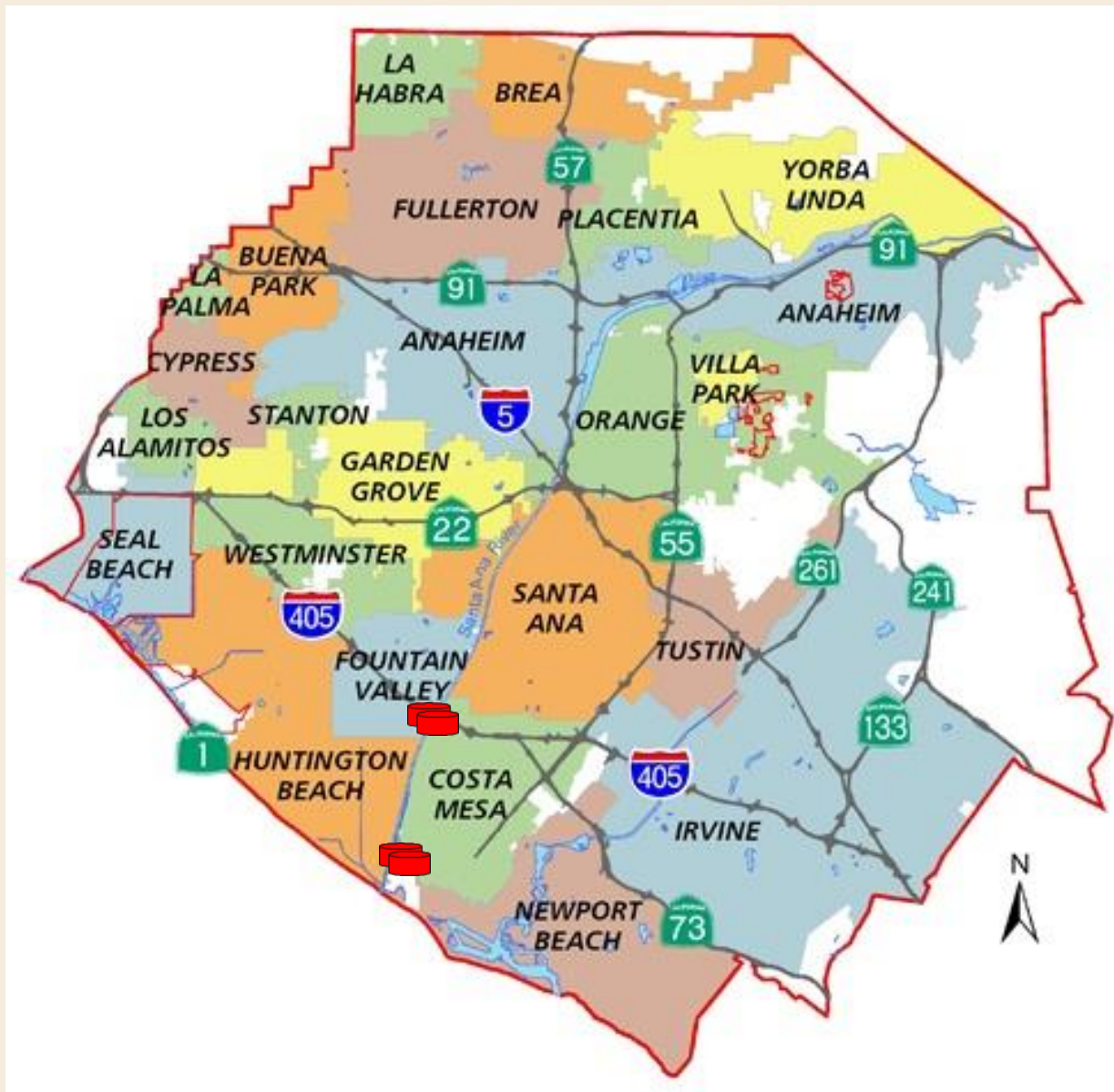


# OCSD Mission

**To protect public health and the environment by  
providing effective wastewater collection, treatment,  
and recycling**

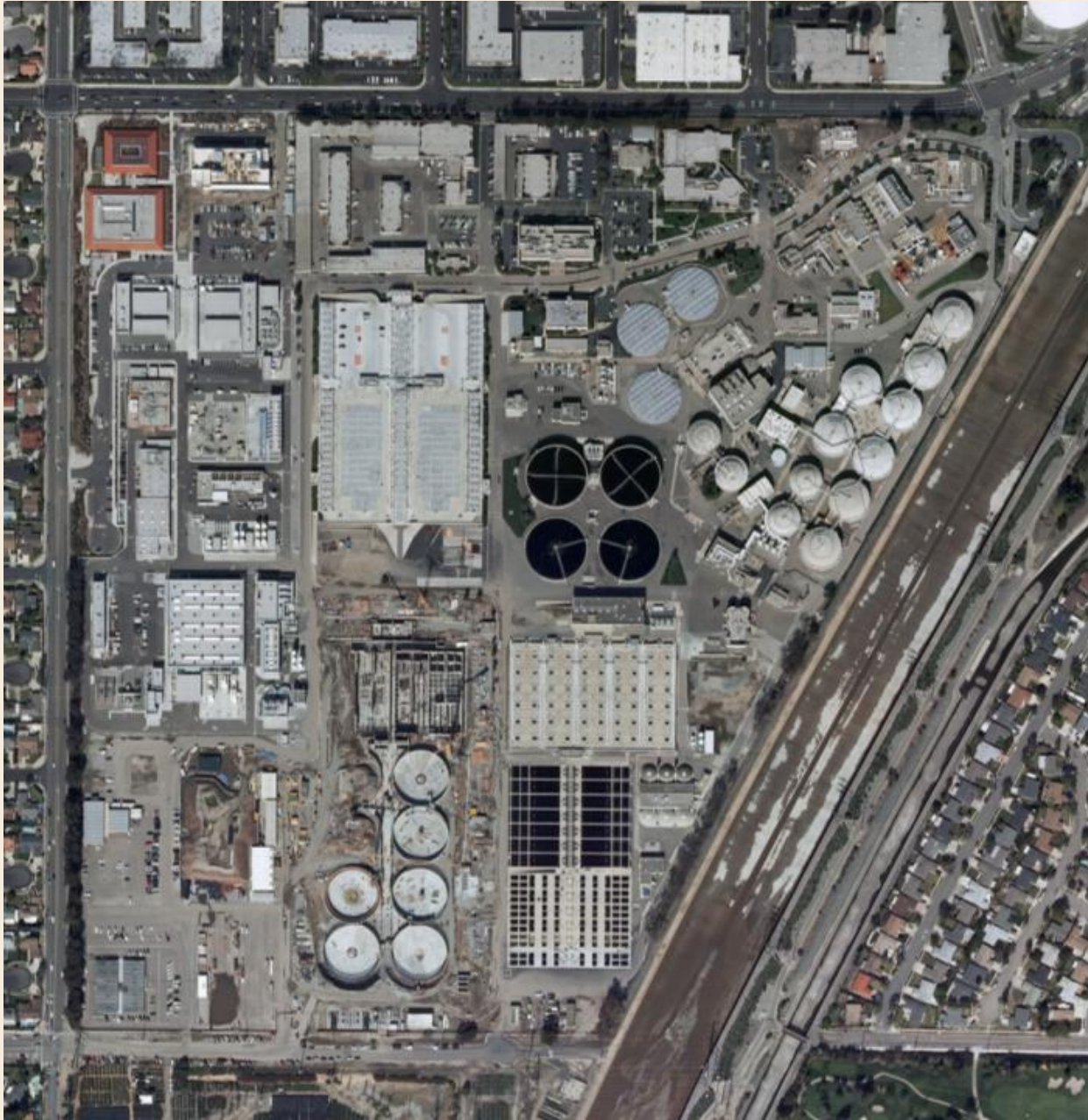


# OCSD Service Area



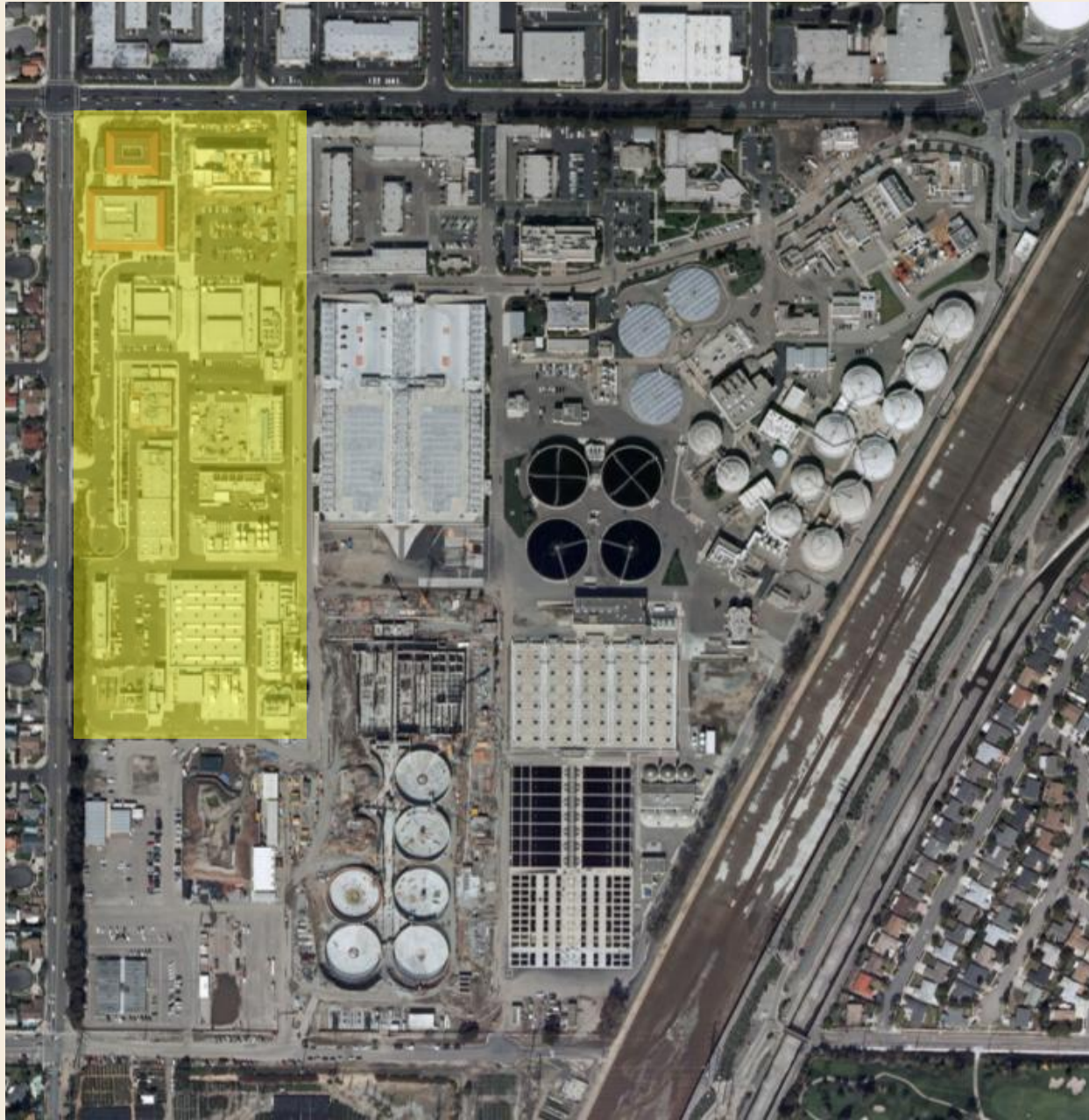


# Water Recovery Facility





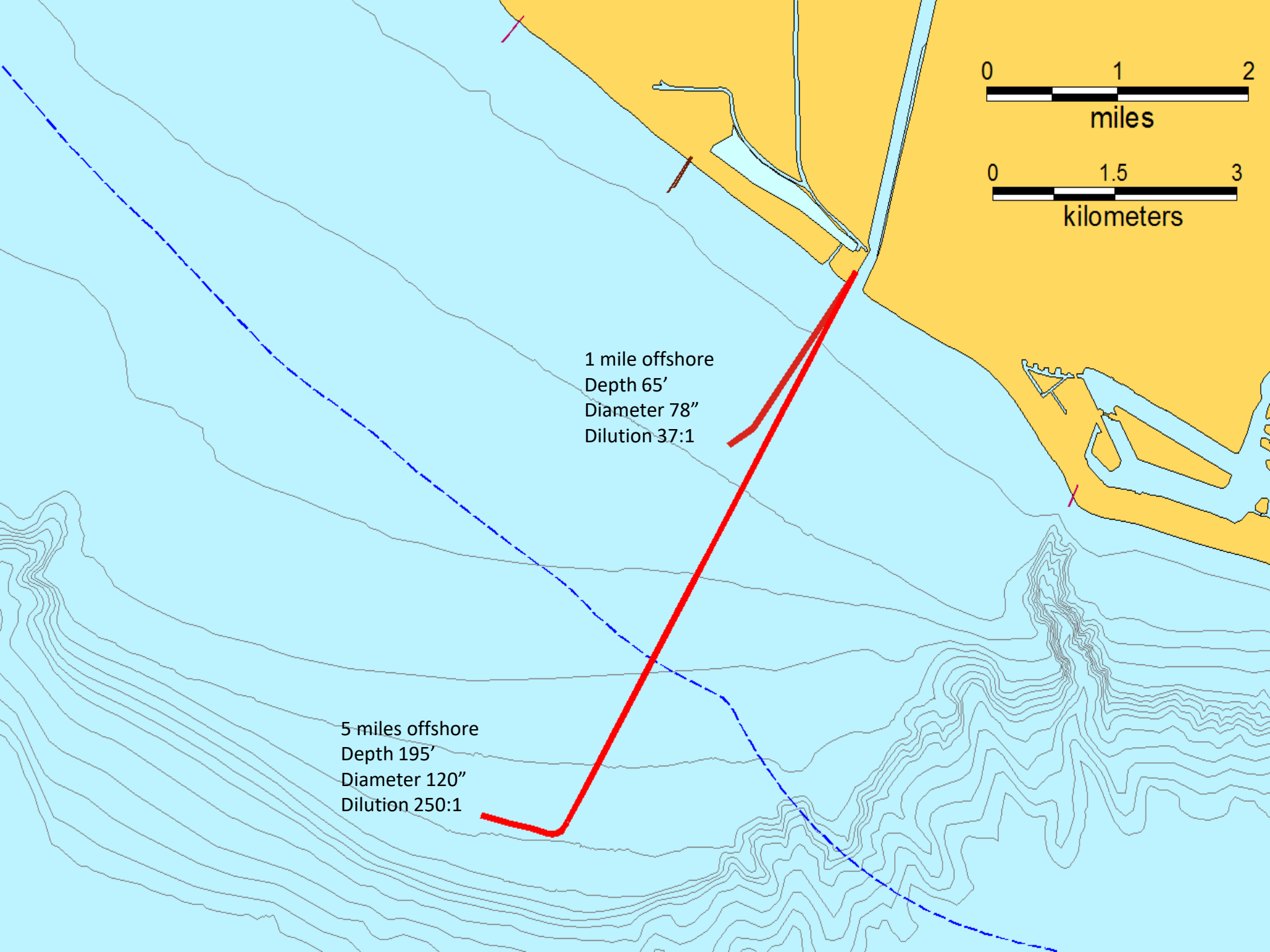
# Water Recovery Facility





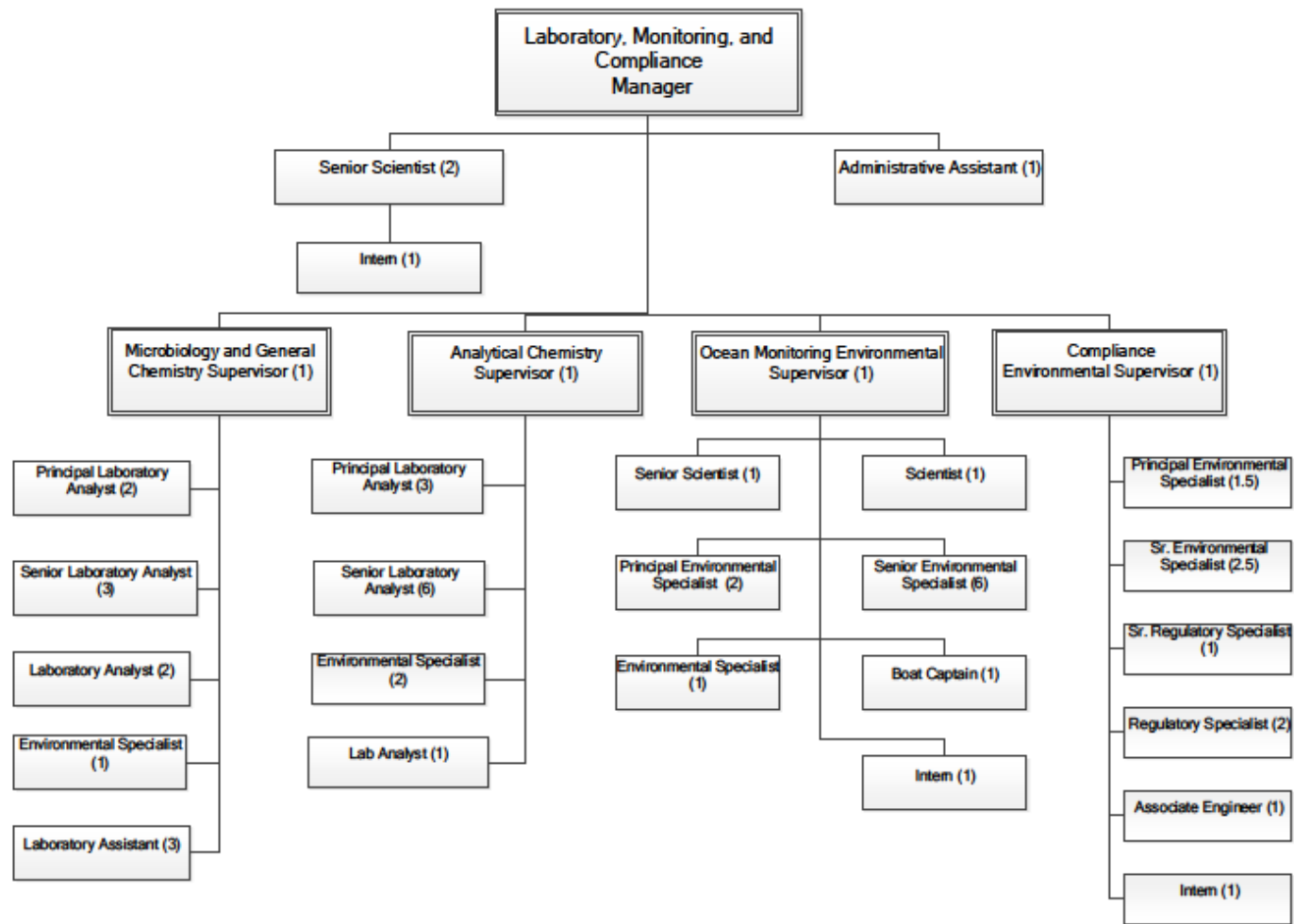
# Wastewater Treatment Facility







# OCSD Laoratory Organization



# OCSD Laboratory Workload

Sample type	Total # of Samples 2016
General Chemistry	69,039
Inorganic Chemistry	142
Metals	7,578
Microbiology	24,182
Organic Chemistry	7,266
Toxicology	288
	108,495

# Staffing

	Lab staff	Ocean Monitoring staff	Average Daily Treatment (MGD)	Lab Staff / MGD	OMP staff / MGD
OCSD	27	14	187	0.14	0.07
LACSD	175	32	510	0.34	0.06
City of SD	95	27	144	0.66	0.19
OCWD	24	-	100	0.24	-



# OCSD Preparation for TNI

- 2010 Lab reorganized and moved to O&M Dept, QC section dissolved
- 2010 QA Administrator appointed
- 2011 TNI template adopted for OCSD SOPs
- 2013 Internal audits implemented
- 2014 TNI standards accepted as best practices
- 2016 Lab reorganized and moved to Environmental Services Dept, QC section created
- 2016 OCSD decides to become TNI accredited
- 2017 OCSD applies for TNI accreditation

# TNI & CA ELAP Standards

## TNI 2009

- Standard 8 years old
- Significant guidance and support materials available
- 2 PE studies each year
- Trained auditors, with extensive check lists
- Multiple day audits, often with multiple auditors

## CA ELAP (1989)

- Standards 28 years old
- Little to no support materials, regulations used for guidance
- 1 PE study each year
- Auditors vary from year to year, each with their own area of expertise.  
Microbiology check list
- 1 auditor for 1 day
- Auditors could be inflexible on findings

# TNI & CA ELAP Standards

## TNI 2016

- 7 Modules, 176 pages
- Standard in 14 States
- Consensus Standards Developed by 10 Committees
- Extensive support resources & manuals
- 2 PE studies each year

## CA ELAP (2017 Draft)

- 7 Articles, 53 pages
- Reciprocity with 2 States
- Standards heavily reference TNI 2016
- On-line support resources & regulations
- 1 PE study each year



# Comparison

## TNI

- Applied in May 28<sup>th</sup>
- Application fee \$8,500
- Audited July 31<sup>st</sup> – August 2<sup>nd</sup>, 2 auditors for 3 days
- Auditors were open to discussions with analysts
- Audit reviewed all aspects of laboratory operations, emphasized areas of documentation

## CA ELAP

- Applied April 24<sup>th</sup>
- Application fee \$8,698
- Audited August 2<sup>nd</sup> – 3<sup>rd</sup>  
2 auditors for 2 days
- Auditors were open to discussions with analysts
- Audit reviewed all aspects of laboratory operations, emphasized procedures and methods

# TNI Audit Findings

- Fluoride spreadsheet is not secure and no record of verification calculations.
- BOD: Analyst “cheat sheet” is not current.
- Quality Manual does not contain OCSD address and phone number, or Complaint Procedure, or Record of Complaints.
- Management Review does not document procedure to seek feedback from customers or review of Quality Manual.
- Mercury SOP must include addition of salt. SOP specifies 15 minutes for color development, analysts only to allow some time after reagent is added.

# TNI Audit Findings (cont)

- TS & VS analysts do not document weight confirmation after final measurement is recorded.
- Analytical pipettes do not need to be sent out for calibration annually, but dispensing volume must be verified quarterly.
- SOP for manual integration of GC/MS data, must include data from before integration, after integration, and analyst who performed the integration.
- Metals preparation (Method 200.2) DOC not fully documented.



# CA ELAP Audit Findings

- Method 200.7 & 200.8 SOP does not specify QA samples be processed as analytical samples.
- Metals method specifies amber sample vials for analysis, clear vials are in use.
- Method 625 SOP does not specify reagent blank to be same as sample matrix & inadequate record of analyst training.
- Cyanide SOP must include when sulfide is detected holding time is reduced from 14 days to 24 hours.
- Traceability of thermometer is missing data for transport of samples to lab.

# Timeline for Accreditation

April 24<sup>th</sup> applied for ELAP renewal (\$8,698)

May 28<sup>th</sup> applied for TNI accreditation (\$8,500)

July 1<sup>st</sup> QA section formed

Laboratory audit by TNI AB (Utah), July 31<sup>st</sup> – August 2<sup>nd</sup>

Laboratory audit by CA ELAP, August 2<sup>nd</sup> – August 3<sup>rd</sup>

TNI audit report of OCSD, expected by September 1<sup>st</sup>

CA ELAP audit report of OCSD, expected by September 2<sup>nd</sup>

OCSD TNI accreditation (Utah), pending acceptance of corrective action response, expected November 1<sup>st</sup>

CA ELAP accreditation renewal, pending acceptance of corrective action response, expected November 2<sup>nd</sup>

# Questions?

