



JUN  
20

# Navigating Nutrient Removal Workshop

## EVENT INFO

### DATE & TIME

Thursday, June 20  
9:00 a.m. - 3:15 p.m.

REGISTRATION & CONTINENTAL  
BREAKFAST 8:30 - 9:00 AM

### REGISTRATION

**\$195 Members**  
**\$245 Non-Members**

FREE FOR STUDENTS

### BROWN AND CALDWELL

201 N Civic Dr.  
Suite 300  
Walnut Creek, CA 94596

**REGISTER >**

For group registrations, please contact **CWEA Member Services** at [memberservices@cwea.org](mailto:memberservices@cwea.org) or call 510.382.7800 x4.

This workshop teaches **nitrogen removal fundamentals** and applications, including an overview of technologies and limits of treatment. Discussions will include innovative methods like Microvi, MABR, and PdNA, along with intensification technologies such as MBR and low-DO approaches.

The goal is to provide participants with an understanding of cost, risk, resiliency, and operational considerations associated with different biological nitrogen removal options. Case studies will be shared to illustrate decision-making processes involved in upgrading nitrogen removal systems. The workshop will conclude with a panel session for audience Q&A.

### DEEPEN YOUR UNDERSTANDING

- Nitrogen removal fundamentals
- Advantages and limitations between different nitrogen removal processes and technologies
- Drivers that can impact nitrogen removal upgrade decisions based on case studies from other agencies



Thank you to the **California Association of Sanitation Agencies** for sponsoring this workshop.

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TIME	EVENT
8:30 - 9:00 a.m.	<b>REGISTRATION &amp; CONTINENTAL BREAKFAST</b>
9:00 - 9:10 a.m.	<b>Welcome and Objectives</b> Max Armenta, Brown and Caldwell
9:10 - 9:40 a.m.	<b>Nitrogen Removal Fundamentals</b> Mike Falk, HDR, and Leon Downing, Black & Veatch
9:40 - 10:20 a.m.	<b>Existing Technologies and Treatment Limits</b> Linda Sawyer, Brown and Caldwell and Andre Gharagozian, Carollo
10:20 - 10:30 a.m.	<b>COFFEE BREAK</b>
10:30 - 10:50 a.m.	<b>Guidelines for Optimizing Nutrient Removal Plant Performance</b> Mike Falk, HDR
10:50 - 11:10 a.m.	<b>EchoWater - Conventional Biological Nutrient Removal (BNR)</b> Erick Bevington, Black & Veatch
11:10 - 11:30 a.m.	<b>Sunnyvale - Split-treatment BNR</b> Jamie Pigott, Carollo
11:30 - 11:50 a.m.	<b>Fresno Sidestream Treatment with ANITA™ Mox</b> Andre Gharagozian, Carollo and Cory Asher, City of Fresno
11:50 a.m. - 1:00 p.m.	<b>LUNCH BREAK &amp; NETWORKING</b>
1:00 - 1:20 p.m.	<b>Four Rivers Sanitation Authority - Aerobic Granular Sludge and Sidestream Treatment</b> Leon Downing, Black & Veatch
1:20 - 1:40 p.m.	<b>Pueblo, CO - Low DO and Hydrocyclones</b> Linda Sawyer, Brown and Caldwell
1:40 - 2:00 p.m.	<b>Palo Alto - Membrane Aerated Biofilm Reactor</b> Seppi Henneman, Brown and Caldwell
2:00 - 2:20 p.m.	<b>Oro Loma - Sidestream Treatment Microvi</b> Mike Falk, HDR and Jimmy Dang, Oro Loma Sanitary District
2:20 - 2:40 p.m.	<b>BREAK &amp; PANEL SET-UP</b>
2:40 - 3:10 p.m.	<b>Question and Answers Panel</b> All Presenters
3:10 - 3:15 p.m.	<b>Closing Remarks</b> Max Armenta, Brown and Caldwell
3:15 - 4:00 p.m.	<b>OPEN DISCUSSION &amp; NETWORKING (OPTIONAL)</b>



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