



State Water Resources Control Board

Division of Drinking Water

Expert Panel Review of Proposed Criteria for Direct Potable Reuse



Meeting 2
December 1, 2021



Kevin M. Hardy

Executive Director
National Water Research Institute
Fountain Valley, CA

Welcome



About NWRI

The nation's collaborative resource for the advancement of water resources science, policy, and innovation.

The independent expert advisory services provider of choice for challenging water quality, water resource management, and related innovation issues.

We provide insight and understanding of current and future issues in water science and technology.



Co-Chairs and Panelists

Co-Chair James Crook, PhD, PE
Environmental Engineering Consultant

Co-Chair Adam Olivieri, DrPH, PE
EOA, Inc.

Richard Bull, PhD
Washington State University (Emeritus)

Jörg E. Drewes, PhD
Technical Univ of Munich

Charles Gerba, PhD
University of Arizona

Charles Haas, PhD
Drexel University

Amy Pruden, PhD
Virginia Tech

Joan Rose, PhD
Michigan State University

Shane Snyder, PhD
Nanyang Technological University

Jacqueline E. Taylor, REHS, MPA
Los Angeles County Department of Public Health (Retired)

George Tchobanoglous, PhD, PE
University of California, Davis (Emeritus)

Michael P. Wehner, MPA
Orange County Water District (Retired)



Expert Panel Process to Date

- Contract Award to NWRI: March 2021
- Co-Chairs Engaged: April 2021
- Panelists Confirmed and Engaged: May 2021
- Project Scope & Approach Final: June 2021
- Full Panel Meeting No. 1: August 2021
- Pathogen Working Group: September 2021
- Source Control Working Group: October 2021
- TMF Working Group: October 2021
- Chemical Working Group: November 2021
- Full Panel Meeting No. 2: Today
- Clarify, Resolve or Process Key Concerns



Meeting No. 2 Objectives

- Present the Panel's status on their review of the draft DPR criteria.
- Presentations from DDW staff on draft DPR criteria.
- Provide time for public comments.



Agenda

Wednesday, December 1, 2021

10:00 a.m.	Welcome, Introductions, Review Agenda, Overview of Panel Process	Kevin M. Hardy, NWRI
10:10 a.m.	Panel Report-Out	Adam Olivieri and Jim Crook, Panel Co-Chairs
10:40 a.m.	DDW Presentations on DPR Criteria Topics	DDW staff
11:30 a.m.	Public Comment Session	Facilitated by Kevin M. Hardy
12:00 noon	Adjourn	



Meeting Ground Rules

- We appreciate your patience!
- Keep yourself muted unless recognized to speak.
- Please keep your camera turned off unless you are speaking.
- GoToMeeting supports internet or phone audio. Please:
 - ✓ Enter your name when you sign in so we can identify you
 - ✓ If you join by phone, use the audio PIN
 - ✓ Keep the phone number handy
 - ✓ Use the chat feature if needed to communicate
- Remain present and minimize multitasking but take breaks as needed.
- Question and answer periods are for Expert Panel members.
- This meeting is being recorded.



To Speak During the Public Comment Session

1. E-mail DDW staff to request a special link and passcode at: DDWrecycledwater@waterboards.ca.gov
2. In the subject line write **DPR Criteria Expert Panel Meeting 2**
3. In the body of the email, provide the following:
 - Your name
 - Who you represent (yourself, another person, an organization)
 - Whether you will attend by videoconference or telephone
 - For phone commenters only, the last three digits of the phone number from which you intend to call



Panel Co-Chairs

James Crook, PhD, PE

Adam Olivieri, DrPH, PE



Review of California Draft DPR Criteria: Expert Panel Meeting 2 - Status

Adam Olivieri, DrPH, PE and Jim Crook, PhD, PE
Panel Co-Chairs

Potable Reuse in California

Regulations and Research Topics

- DPR Panel and Schedule
 - Introductions
 - Schedule
- Meeting 2 Goals
 - Present the Panel's status on their review of the draft DPR criteria
 - Presentations from DDW staff on draft DPR criteria
 - Provide time for public comments.

Expert Panel Members

James Crook, PhD, PE, Panel Co-Chair

Environmental Engineering Consultant

Adam Olivieri, DrPH, PE, Panel Co-Chair

EOA, Inc.

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LA County Department of Public Health, Retired

George Tchobanoglous, PhD, PE

University of California Davis, Emeritus

Michael P. Wehner

Orange County Water District, Retired

Schedule

- Meeting 1: August 24-25, 2021
- Meeting 2: December 1, 2021
- Meeting 3: January 26, 2022
- Meeting 4: February 28, 2022
- Meeting 5: TBD

Technical Work Groups and support to DDW through December 2023

DPR Panel – Summary of Key Comments

- The Panel appreciates the quality of the material prepared by DDW and the WRF researchers
- The body of work is extremely important for California’s development of a reliable and resilient water supply.
- The “adequate protection of public health” is not only the risk posed by the water being produced, but also the side effects of producing the water—one of which is energy consumption.

DPR Panel – Summary of Key Comments

- To be protective of public health, holistically, the State Water Board needs to be cognizant of overengineering treatment barriers that result in excessive energy use.
- While the Panel agrees with DDW's intent to keep the criteria broad enough to cover all forms of DPR, there are clear features that distinguish RWA and TWA and that warrant further consideration by DDW within the draft Criteria.

DPR Panel – Summary of Key Comments

- **Pathogen Criteria.** Further clarification is necessary on handling multiple conservative assumptions to develop log reduction values (LRVs).
- **Enhanced Source Control Criteria.** Further clarification is necessary to evaluate and justify the rationale for the draft criteria language.
- **Online wastewater collection system monitoring.** Suggest that DDW include criteria that encourages investigation and future development and application of this concept through pilot programs.

DPR Panel – Summary of Key Comments

- **Monitoring disease surveillance programs or community raw wastewater surveillance monitoring programs.** Focus on developing a program of close communication and coordination with local and state public health agencies as well as major hospitals within the DiPRRA service area.
- **Optimize the secondary treatment process.** Criteria need to result in producing a stable and high-quality water for the advanced water treatment facility.

DPR Panel – Summary of Key Comments

- **Alternative Criteria.**

Expand the section to such that it is not be limited to just chemical treatment. The SWB criteria should not inhibit the development/testing and eventual use of new technology.

- **Chemical Criteria.**

- Ozone and BAC are separate treatment processes – define process goals
- Ozone and BAC operate best before the RO process to manage low molecular weight (LMW) compounds.

DPR Panel – Summary of Key Comments

- **Chemical Criteria.**
 - Blending language is confusing – needs clarification.
 - Consider including equivalency criteria for Ozone/BAC in the criteria. – consider log reductions for specific LMW compounds that may pass through the full advanced treatment train.
- **Technical, Managerial, and Financial (TMF).**
 - Include specific information on what is expected to be included in the TMF documentation. Identify the key factors DDW staff will use to review the plan and determine acceptability and consider allowing third-party review of the TMF plan on behalf of DDW.

Thank you

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