



CALIFORNIA

Water Boards

STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS



NATIONAL WATER RESEARCH INSTITUTE

Meeting 3

January 26, 2022



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, Panel Co-Chair
Environmental Engineering Consultant

Co-Chair Adam Olivieri, DrPH, PE, Panel Co-Chair
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 Polytechnic Institute

Joan B. 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)



Meeting No. 3 Objectives

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



Agenda

Wednesday, January 26, 2022

9:00 a.m.	Welcome, Introductions, Review Agenda, Overview of Panel Process	Kevin M. Hardy, NWRI
9:05 a.m.	Panel Report-Out	Adam Olivieri and Jim Crook, Panel Co-Chairs
9:20 a.m.	DDW Staff Presentations	DDW Staff
9:45 a.m.	Public Comment Session	Facilitated by Kevin M. Hardy
10:00 a.m.	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.
- Zoom supports internet or phone audio.
- Please enter your name when you sign in so that we can identify who is speaking.
- This meeting is being recorded.



To Speak During the Public Comment Session

1. E-mail DDW staff to request special link and passcode at: DDWrecycledwater@waterboards.ca.gov
2. In the subject line write **DPR Criteria Expert Panel Meeting 3**
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



**DPR Criteria Expert Panel
Co-Chairs**

James Crook, PhD, PE

Adam Olivieri, DrPH, PE



Expert Panel 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



Summary of Expert Panel Key Comments and Interim Recommendations

- The Panel appreciates the quality of the material prepared by DDW and the WRF researchers.
- The Panel appreciates the collaborative and collegial working relationship with the DDW staff.
- The body of work by DDW and WRF is extremely important for California's development of a reliable and resilient water supply.



Summary of Expert Panel Key Comments and Interim Recommendations

- While the focus of this review is to determine if the proposed code provides “adequate public health protection” relative to the risk posed by the water being produced, there is a significant concern about unintended consequences—particularly related to energy consumption, excessive energy use, and carbon footprint.
- A responsive, sustainable, and cost-effective approach to developing these regulations includes recognition by the State Water Board of potentially over-engineered treatment barriers and requires an intentional effort by DDW to develop a reasonable number and combination of such barriers.



Summary of Expert Panel Key Comments and Interim Recommendations

Define RWA in Criteria

- The Panel has reviewed the draft criteria again after carefully listening to the rationale provided by DDW staff at Meeting 2 for not defining RWA in the draft criteria.
- While the Panel agrees with DDW's intent to keep the criteria broad enough to cover all forms of DPR, the Panel still believes that clearly defining RWA in the criteria (or Statement of Reasons) is appropriate and necessary.



Summary of Expert Panel Key Comments and Interim Recommendations

Communication and Notification

- All notifications to the public and public agencies need to be consistent with those currently required as part of the California potable water regulations and the SDWA, and references to existing potable water notification regulations should be included in the DPR criteria.
- The 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 is an important element of the draft criteria.



Summary of Expert Panel Key Comments and Interim Recommendations

Chemical Control Criteria

- Recommend that ozone and BAC processes are before the RO process to manage low molecular weight (LMW) compounds.
- Delete the applied O₃/TOC dosage language and include a requirement to develop project-specific dosage as part of the engineering report clause.
- Recommend using acetone and formaldehyde as BAC performance indicators.



Summary of Expert Panel Key Comments and Interim Recommendations

Chemical Control Criteria (Cont'd.)

- Recommend carbamazepine and sulfamethoxazole as O₃ performance indicators.
- Recommend nitrite online monitoring for ozone feedwater.
- Alternatives relating to O₃/BAC should be addressed as part of the alternatives clause.



Summary of Expert Panel Key Comments and Interim Recommendations

Engineering Report Criteria

- Include the requirement to define a chemical peak as part of monitoring and plant operation plans. Use DPR-4 as a guidance document.
- Include a requirement to address optimizing the secondary treatment process. Criteria need to result in producing stable and high-quality, fully nitrified water for the advanced water treatment facility.
- Include a reference to TMF documents that DDW will use to review and approve TMF plans. (Could also be in Statement of Reasons).



Summary of Expert Panel Key Comments and Interim Recommendations

Engineering Report Criteria (Cont'd.)

- Include a requirement to address other plant operation and performance issues such as:
 - Changing wastewater characteristics.
 - Climate change.
 - Influent flow and load equalization.
 - WWTP optimization to reduce energy and chemical use at AWPF.
 - Equalization and treatment of return flows.
- Include a requirement to develop project specific O₃/TOC dosage as part of the engineering report clause.
- Include a requirement to assess cyber security plans or to develop a plan.



Summary of Expert Panel Key Comments and Interim Recommendations

Other Items

- Include a criterion that requires 24/7 operation for 12 months before considering a request for reducing the number of operators and/or unstaffed operations.
- Include a clear linkage in the criteria to the SWB Recycled Water Policy for CECs that should be monitored, the monitoring trigger levels, and the response action plan.
- The criteria include TOC monitoring in several locations. The use of the 0.5 mg/L TOC, as written, could imply that TOC is a health-based criteria. The criteria and the Statement of Reasons should clarify that TOC is not a health-based criteria.



Summary of Expert Panel Key Comments and Interim Recommendations

Other Items (Cont'd.)

- The criteria should include specific times frames and digital formats for submitting monitoring data to the SWB-DDW.
- Include a 20-year life cycle planning horizon for the DiPRRA Joint Plan and a 10-year LCCA update every 5 years.



Summary of Expert Panel Key Comments and Interim Recommendations

Pathogen Control Criteria

- Further discussion is needed about handling multiple conservative assumptions to develop log reduction values (LRVs). The Panel is reviewing the technical basis and assumptions for the LRVs and plans to report out on its review at the February Panel meeting.
- The Panel agrees with the DDW draft that existing DWTP treatment processes that have been validated for LRVs and approved by DDW do not need to be revalidated.



Summary of Expert Panel Key Comments and Interim Recommendations

Pathogen Control Criteria (Cont'd.)

- Additional clarification is needed for interpreting the criteria (maybe in the Statement of Reasons) on how alternates to LRVs are addressed within the criteria such that there is no need to expand the alternatives clause to cover pathogen controls.
- Future topics to be covered: enhanced source control, wastewater collection system monitoring, blending as a process.

Thank you

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