



RECYCLED WATER BRIEFING

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Types of Recycled Water

- Undisinfected Secondary
- Disinfected Secondary-23
- Disinfected Secondary-2.2
- Tertiary
- Advanced treated

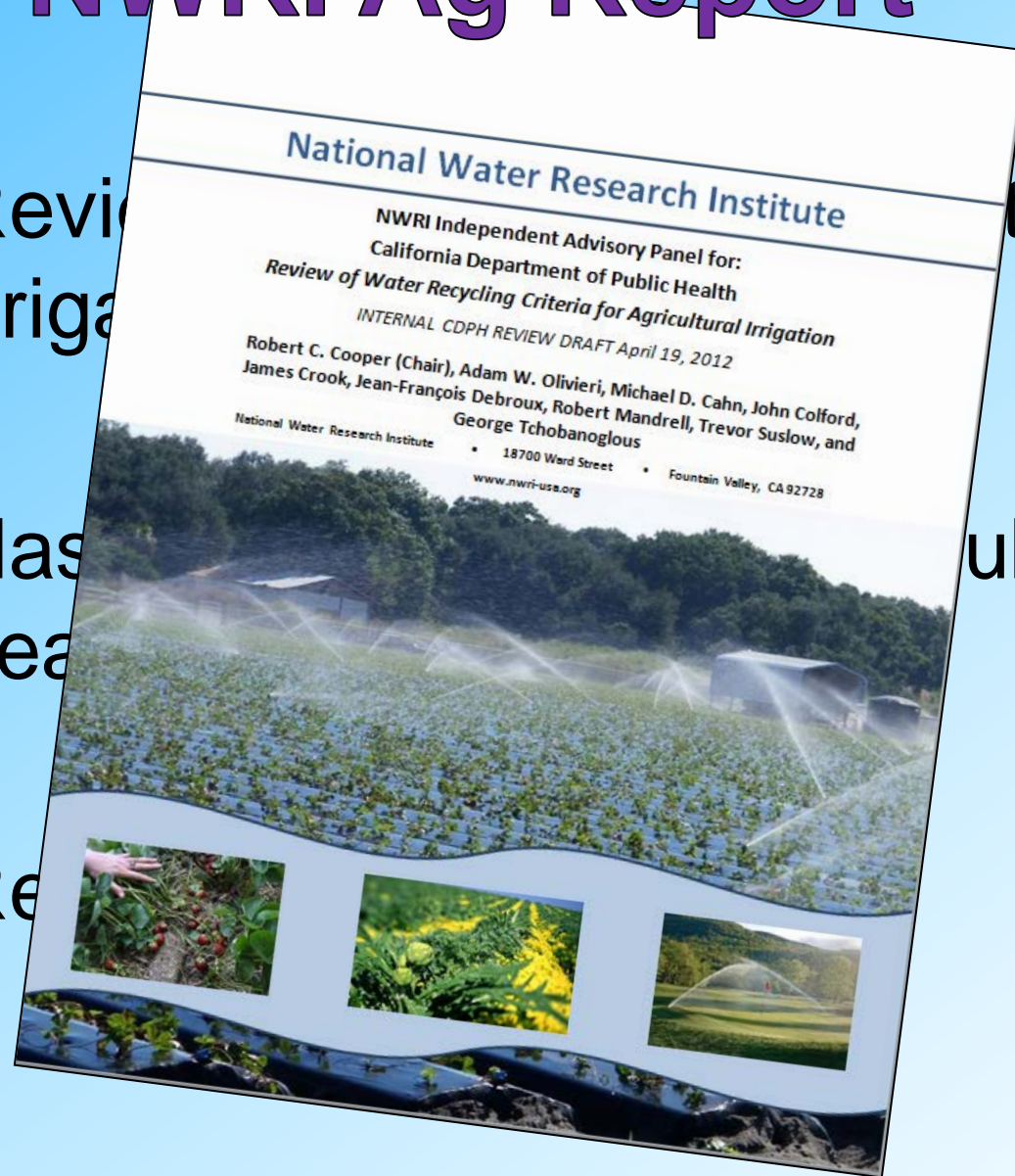


NWRI Ag Report

- Review of Water Recycling Criteria for Agricultural Irrigation

- Has been reviewed by the California Department of Public Health

- Report



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Filtered Wastewater

Title 22, Section 60301.320

- Filter Media
 - Coagulated
 - ≤ 5 gallons/min/ft²
 - Ave < 2 NTU
 - Over 5 NTU $< 5\%$
 - Never > 10 NTU
- Membrane Media
 - Over 0.2 NTU $< 5\%$
 - Never > 0.5 NTU

Alternative section



Disinfected Tertiary

Title 22, Section 60301.230

- Chlorine

- $CT > 450 \text{ mg-min/L}$
- Modal contact time $> 90 \text{ mins}$



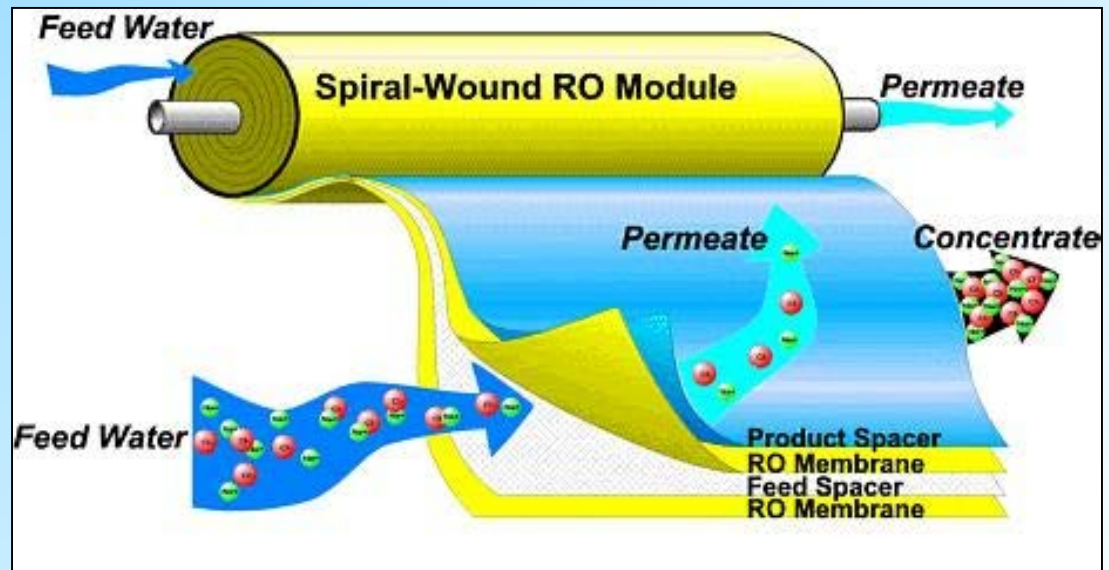
- Alternative

- 5-log virus inactivation or removal



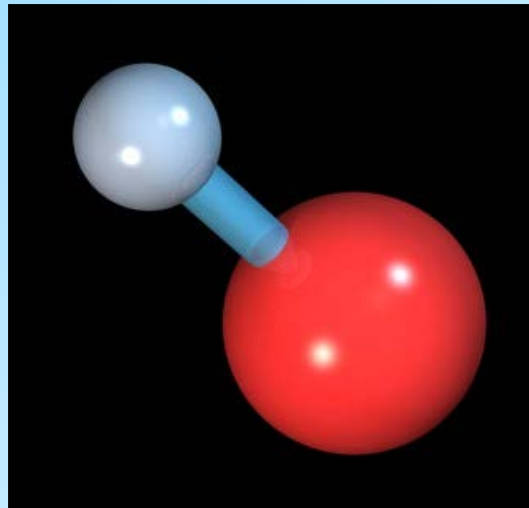
Reverse Osmosis Basics

- Effective on large / ionic / hydrophobic CECs
- Most Molecular Weight > 200 Daltons are removed
- Less effective on:
 - NDMA
 - 1,4-dioxane



Advanced Oxidation (AOP) Basics

- Process of generating chemical radicals used to oxidize organic material.
- Very fast reaction (seconds).
- Produced via UV/H₂O₂ or Ozone/H₂O₂.



Source Control



- Industrial pretreatment
- Assessment of fate
- Source investigations
- Outreach programs
- Inventory contaminants
- Meets effluent limits

Upcoming Reg Status

Task	Date	Status
Adopted Groundwater Recharge Regulations	June 2014	✓
Expert Panel Report on DPR Research Recommendations	June 2016	✓
Report to the Legislature on Feasibility of DPR	December 2016	✓
Proposed Surface Water Augmentation Regulations	Early 2018	
Future DPR Regulations	????	

Example projects

- Groundwater Recharge
 - Orange County Water District
 - Inland Empire Utilities Agency
 - Monterey RWPCA
- Surface Water Augmentation (proposed)
 - City of San Diego
 - Padre Dam

Discussion of Proposed Projects

- City of Pismo (GWR)
- Santa Barbara (GWR or SWA)
- Carpinteria (GWR)



Questions?

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