Comments on Draft Cease and Desist Order on Compliance with South Delta Salinity Standards

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Primary Issue of Concern

- Salinity Standard Compliance Tied to Development of Operable Barriers
  - Technically Invalid Approach
- Water Quality Standards Should Be Based on Concentrations of Chemicals That Will Protect the Beneficial Uses of Waterbody
- Should Not Be Based on Method of Compliance

Background in Development of Water Quality Criteria/Standards

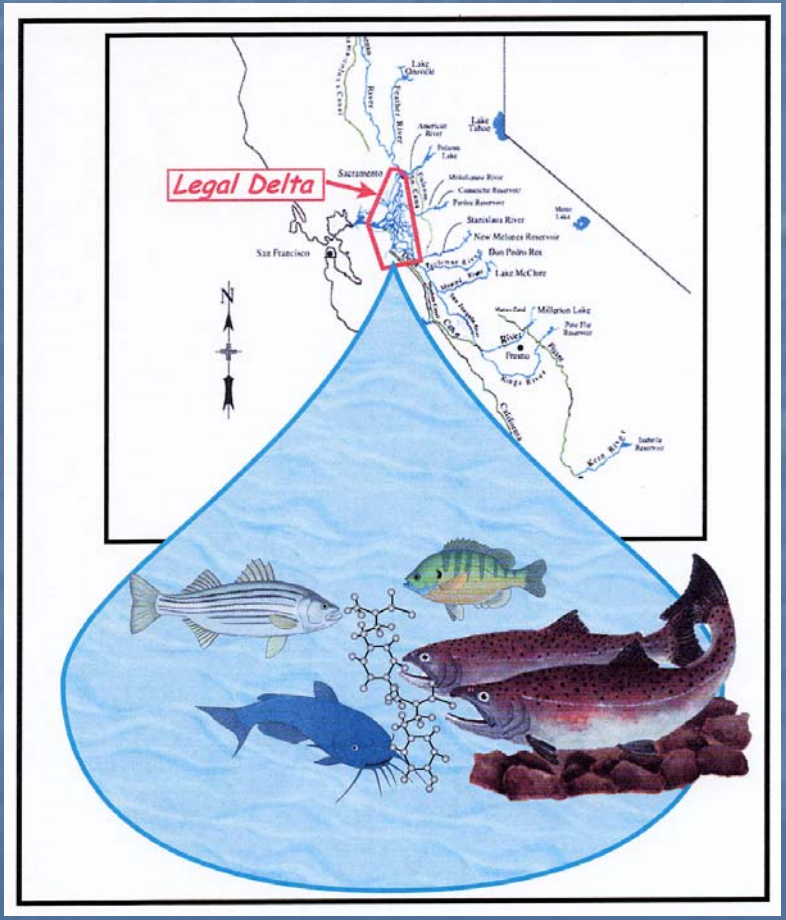
- G. Fred Lee Active in This Topic Since mid-1960s
  - Advisor to Governmental Agencies & Others
  - Peer-Reviewer of National Academies of Science & Engineering “Blue Book” of Water Quality Criteria – 1970s
  - Peer-Reviewer for US EPA Water Quality Criteria “Gold Book” Criteria – mid-1980s
  - See Written Testimony for Other Involvement

Operable-Barrier Impact Issues
◄ Salinity ►

- Should Not Be Assumed That Development of South Delta Operable (Permanent) Barriers Will Solve Water Quality Problems in South Delta Channels
- Problems of Excessive Salinity Are Related to Excessive Salinity in SJR at Vernalis
  - If SJR Vernalis Standard Allowed to Remain at 0.7 and 1.0 mS/cm, South Delta Channels Will Have Excessive Salinity
- With SJR Vernalis Salinity Standard Equal to South Delta EC Standard
  - Irrigated Agriculture in South Delta Will Not Be Able to Farm without Causing Violations of South Delta EC Standard in Some Channels

Overview of Sacramento-San Joaquin River Delta Water Quality Issues

G. Fred Lee, PhD, DEE Anne Jones-Lee, PhD



Operable-Barrier Impact Issues
◄ Other Pollutants ►

- South Delta Channels Are Listed As “Impaired” Due to Other Pollutants
  - Mercury – Sulfate
  - Low Dissolved Oxygen
  - Pesticides – Toxicity
  - Unknown-Caused Toxicity
  - Excessive Bioaccumulation of Organochlorine “Legacy” Pesticides

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  - Excessive Nutrients
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Operable-Barrier Impact Issues
◄ Other Pollutants ►

- Operation of Operable Barriers Will Impact Water Quality in South Delta
  - Impact of Other Pollutants Poorly Understood
    - Need to Require That South Delta Water Exporters (DWR & USBR) Fund Studies to Define How Operation of South Delta Barriers Will Impact Water Quality

Low-Head Reverse-Flow Pumping across Permanent Barriers

- Adds More Higher-Quality Sacramento River Water to South Delta
- Low-Head Reverse-Flow Pumping Could Help Solve Many of the Water Quality Problems
- DWR Should Be Required to Conduct Public Review of Full Range of Benefits of Low-Head Reverse-Flow Pumping across Operable (Permanent) Barriers
  - Consider Economic Benefits in Helping to Solve South Delta Water Quality Problems

Recommendations

- Require DWR & USBR to Comply with South Delta Salinity Standards, Independent of Existence and Operation of Permanent Barriers
- Require That DWR/USBR Fund Independent Studies of Impact of Operation of Permanent Barriers on All Aspects of South Delta Water Quality
- Require Comprehensive Review of Water Quality & Economic Benefits of Low-Head Reverse-Flow Pumping across Operable (Permanent) Barriers

Further Information

Consult Website of
Drs. G. Fred Lee and Anne Jones-Lee

http://www.gfredlee.com

SWRCB (2000) Decision 1641 page 85

"*The Central Valley RWQCB is currently in the process of setting salinity objectives for the San Joaquin River. (R.T. p. 4847.) The Central Valley RWQCB is hereby directed promptly to develop and adopt salinity objectives and a program of implementation for the main stem of the San Joaquin River upstream of Vernalis.*"

SWRCB (2000) Decision 1641 page 88

"*The construction of permanent barriers alone is not expected to result in attainment of the water quality objectives. (R.T. pp. 3672, 3710, 3787-3788; DWR 37, p. 15; SWRCB 1e, pp. [IX 30]-[IX-41].) The objectives can be met consistently only by providing more dilution or by treatment. (R.T. p. 3737.)*"