



**Strawman Principles for Policy Discussion  
at the CV-Salts Executive Committee Meeting on 8/23/2012**

Please review the White Paper entitled: *"Salinity Effects on Agricultural Irrigation-Related Uses of Water"* prepared by Dr. Richard Meyerhoff of CDM-Smith, Inc.

- 1) Waterbodies designated AGR should be protected from the adverse effects of excess salinity by a narrative, rather than numeric, water quality objective. Such an approach:
  - A) Allows the Regional Board to consider a wide range of relevant factors that are known to mitigate or aggravate the potential for salinity to adversely affect crop production. The number of relevant factors makes it impossible to establish a single default numeric objective to govern salinity.
  - B) Allows the Regional Board to develop implementation plans that are tailored to different conditions found throughout the Central Valley on a case-by-case basis.
  - C) Allows the Regional Board to avoid the cost and complexity of amending the Basin Plan each time a site-specific water quality objective is warranted.
  - D) Allows the Regional Board to more easily and quickly update implementation requirements in response to new scientific information, new technology developments, and/or new management practices.
  
- 2) Factors governing the determination regarding what constitutes Reasonable Protection of water quality used to support irrigated agriculture include, but are not limited, to:
  - A) Soil conditions (type, permeability, SAR, etc.)
  - B) General climate conditions
  - C) Specific drought conditions
  - D) Cropping patterns
  - E) Cropping alternatives
  - F) Irrigation methods and application timing
  - G) Existing water supply: native surface, native groundwater, imported
  - H) Access to alternative water supplies
  - I) Economic value of existing and alternative crops

- 3) The Regional Board is required to establish water quality objectives that protect the most sensitive use (WARM, COLD, AGR, MUN, REC-1, GWR, etc.). However, the Board has the discretion, but not the obligation, to focus on the most salt-sensitive crop when developing numeric translators to implement the narrative objectives for salinity.
- 4) When evaluating the potential for increasing salinity to adversely affect the AGR beneficial use, it is appropriate for the Regional Board to presume that all stakeholders (dischargers and water users) are obligated to implement Best Management Practices that assure maximum use and reuse of water for agricultural irrigation prior to final disposal.
- 5) Where numeric translators are used to implement the narrative objectives, the following table describes an appropriate construct for evaluating salinity-related risks to AGR uses in the context of federal and state water quality regulations.

<b>Ideal Quality</b>	<b>Acceptable Quality</b>	<b>Impaired Quality</b>	<b>Unacceptable Quality</b>
<700 uS/cm	700-1,500 uS/cm	1,500 - 3,000 uS/cm	>3,000 uS/cm
<500 mg/L TDS	500-1,000 mg/L TDS	1,000-2,000 mg/L TDS	>2,000 mg/L TDS
Salinity levels below this threshold impose no significant restriction on AGR use. Changes in salinity concentrations that remain below this threshold are presumed to pose no risk of impairment to existing or potential AGR use.	Salinity concentrations in this range may impose some limited restrictions on the time, place and manner where such water could be used for irrigation but water quality remains suitable for agricultural irrigation purposes when accompanied by appropriate BMPs.	Salinity concentrations in this range impose limitations on the use of such supplies for agricultural irrigation and, as such, degradation to such levels should be avoided as it fails to fully protect the AGR use.	Salinity concentrations in this range effectively preclude the AGR use from being attained except in the most extreme circumstances. TDS at this level poses a severe threat to the entire AGR use.
<b>Presumption: "Reasonably Protected"</b>		<b>Presumption: "Impaired"</b>	

- 6) Water quality regulations governing protection of native (local) water quality should not be driven by salt-sensitivity of crops grown using higher quality imported water when such crops could not have been economically cultivated using the native surface or ground water supply.
  
- 7) Numeric translators of the narrative salinity objective need not be derived so as to ensure that water quality imposes no risk of yield reduction for any given crop. This is consistent with the manner in which water quality objectives are developed and implemented to protect other beneficial uses; for example:
  - A) Bacteria standards are not set to assure zero risk of illness to swimmers. Rather the objectives were derived to prevent an unacceptable risk of illness (generally a risk of 8 additional illnesses per 1,000 swimmers or an increased risk of about 50% over the background illness rate).
  - B) Water quality criteria derived to protect aquatic organisms are intended to prevent adverse effects on 95% of the species expected to occur in a specific (WARM or COLD) aquatic ecosystem. The most sensitive species are not necessarily assured full protection against any and all potentially adverse effects of water quality.
  - C) Fish tissue standards are established using conservative assumptions regarding total consumption with some adjustment for sensitive sub-populations (pregnant women, children, sustenance fisherman, etc.) but are not intended to provide a guarantee of zero risk to highly sensitive (immune compromised) individuals or those who consume far in excess of dietary recommendations.
  
- 8) Protecting the AGR beneficial use in the Central Valley necessitates that the Regional Board evaluate the potential benefits and costs of additional water quality regulation on a large scale. Specifically, imposing more stringent water quality objectives on salinity to protect the ability to grow salt-sensitive crops at the bottom of a watershed may result in a net reduction in agricultural output if it prevents less sensitive crops from being grown higher in the watershed. This is a consideration that does not normally arise when establishing water quality objectives to protect COLD, WARM, MUN or REC.
  
- 9) The California constitution prohibits the "waste of water" and the SWRCB's Recycled Water Policy is intended to encourage the use and reuse of water. Consequently, water quality objectives should be established in a manner that maximizes long-term sustainable agricultural output for the entire watershed rather than ensuring special protection for the most salt-sensitive species at the expense of total agricultural output for the greater Central Valley region.



**CALIFORNIA WATER CODE**  
**Section 13000**

“...activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.”

**CALIFORNIA WATER CODE**  
**Section 13241**

“It is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses. Factors to be considered by a regional board in establishing water quality objectives shall include, but not necessarily be limited to, all of the following:

- a) Past, present, and probable future beneficial uses of water.
- b) Environmental characteristics of the hydrographic unit under consideration, including quality of water available thereto.
- c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect water quality in the area.
- d) Economic considerations.
- e) The need for developing housing within the region
- f) The need to develop and use recycled water.”