

CV-SALTS Executive Committee Meeting

May 12, 2011 9:00 AM to 3:00 PM

Sacramento Regional Sanitation District Offices – Sunset Maple Room
10060 Goethe Rd, Sacramento 95827

Teleconference (218) 339-4600 Code: 927571#

Posted 4-29-11 – Revised 5-9-11

Meeting Objective:

- Review, discuss and refine committee member nominations for waterbodies that should be designated AGR, or exempt from that designation, and
- To review the "Test Consensus" discussing the basis for designating, de-designating or subcategorizing MUN waters (summary of previous meeting 3/12/11).

AGENDA

- 1) Welcome and Introductions Chair
 - a) Review/Approve [Executive Committee Meeting Notes for April 22, 2011](#) – 2 min
 - b) Committee Roll call and [Membership Roster](#)
- 2) Review [Test Consensus Summary for MUN](#) – 1 hour
- 3) Basin Plan AGR Designations – 2 hours
Tim Moore – Review & discuss [Executive Committee Homework #2](#) submissions.
Action: Establish AGR designation criteria based on agreed upon waterbody examples.

Lunch on your own

- 4) Basin Plan AGR Designations – 2 hours
Tim Moore – Review & discuss Executive Committee Homework #2 submissions.
Action: Establish AGR designation criteria based on agreed upon waterbody examples.
- 5) Set next meeting dates and objectives (May 24 and May 26, 2011)
Review [Schedule of Policy Discussions](#)
- 6) Future Items
 - a. All administrative items are deferred to the May 24, 2011 Executive Committee Conference call.

CV-SALTS meetings are held in compliance with the Bagley-Keene Open Meeting Act set forth in Government Code sections 11120-11132 (§ 11121(d)). The public is entitled to have access to the records of the body which are posted at <http://www.cvsalinity.org>

CV-SALTS Executive Committee Meeting Notes

April 22, 2011 10:00 AM to 12:00 PM

Attendees are listed on the Membership Roster

AGENDA

1) **Welcome and Introductions Chair**

- Meeting was bought to order via teleconference by Vice Chair, Jeff Willet; attendees acknowledged their attendance through email in lieu of a roll call. A quorum was present.
- David Cory moved to approve, and Nigel Quinn seconded, and by general acclamation the April 12, 2011 meeting action notes were approved.
- Nigel Quinn moved to approve, and Joe DiGiorgio seconded, and by general acclamation the April 6, 2011 Technical Committee Meeting Notes were approved.

2) **Lower San Joaquin River Committee Letter of December 10, 2010**

- Nigel Quinn and Lisa Holm summarized the Technical Committee's review of the LSJR December 10, 2010, stating that the committee was in agreement that the LSJR should move forward with a review of the designations for MUN and PROC. Mike Nordstrom moved to approve, and Lisa Holm seconded, the recommendation from the Executive Committee to the LSJR Committee to move forward with the project, and by general acclamation the motion was approved.

3) **Lower San Joaquin River Committee Project Request of January 12, 2011**

- Lisa Holm reviewed the Scopes of Work for the project, and Jeanne Chilcott and Daniel Cozad reviewed the available funding sources. J.P. Cativiela indicated that the Evaluation of Animal Drinking Water Quality Criteria study is an appropriate use of the research funding available from the Dairy industry, and they are potentially interested in funding such a study, in exchange for perhaps a partial CVSC membership credit. The group agreed that such an agreement should be referred to CVSC for a decision about credit but welcomed the opportunity for funding.
- After a discussion on the proposed RFP for the project, a motion was put forward by David Cory, and seconded by Nigel Quinn, to put the RFP out to both identified university, and non-university interests, and that the LSJR Committee should report back to the Executive Committee with recommendation on Award and a finalized plan for moving forward with the projects. The motion was approved by general acclamation.
- After a discussion regarding the proposed funding of \$81,000 for this project, the committee approved by general acclamation a motion to have the Drainage Authority put the RFP out to both university and non-university interests. Once the contractor is selected by the LSJR Committee they will report back with their funding recommendation to the Executive Committee. Part of that funding effort will include looking into the opportunity to have some of this funded from the Dairy CARES group.

4) **2011 CV-SALTS Progress Milestones Status - Updated status and Program Funding**

- Daniel Cozad reviewed the current Milestones and Project Funding status.

5) **Technical Project Manager Scope Committee Update**

- Daniel Cozad reviewed the Scope of Work for the Technical Project Manager. After review and discussion of the contracting options for the Technical Project Manager it was decided to move forward with the RFQ. Daniel will make the final edits to the RFQ and present those back to the committee, (plus Nigel and Lisa), that worked on the Scope.

6) **Framework for Salt and Nitrate Identification Studies**

- Lisa Holm reviewed the Technical Memorandum that lays out the steps the subcommittee feels should be in a Salt and Nitrate Identification Study. The subcommittee is still looking

for feedback from the Executive Committee on what level of detail is going to be the most useful. Jeanne Chilcott moved to have the Executive Committee: accept the general points of Framework items 1-6 on Package Page 44, and direct the Knowledge Gained Committee to complete finalization of the broader document that includes more detail on all of those elements. Lisa Holm seconded, and by general acclamation the motion was approved. The committee also approved, by general acclamation, the submission of the Framework as completion of the requirement for the Milestones.

- By general acclamation the Executive Committee accepted the Technical Review of Salt and Nitrate Source Study Approaches, while also asking the Knowledge Gained Committee to summarize the review based on what comes out of their more detailed Framework commenting on how these studies performed.

7) Management Practice Subcommittee Update Status

- Parry Klassen reviewed the last BMP Conference Call. The committee is looking at assembling BMP models from various industries (Wine Institute, League of Food Processors, etc.), in an effort to come up with a toolbox of effective practices for managing Salt and Nitrates. Parry will schedule a BMP conference call for the early part of May and report back on the Administrative Call for the Executive Committee in May.

8) Public Education and Outreach Committee

- Joe DiGiorgio summarized the issues discussed at the last PEO meeting. With the priority being given to the Schedule of Policy Discussions between now and July the Committee recommended that the PEO Committee hold off on initiating any new projects proposals until the June-July timeframe.

9) Set next meeting objectives and date (May 12, 2011) and conference call date _____

- The next teleconference for administrative items for the Executive Committee will be Tuesday, May 24th from 1100 – 1200. BMP Committee is scheduled for Monday, May 2 at 1100. Items noted for the 5/24 Executive Committee conference call were: Technical Project Manager, report back from BMP meeting, draft proposal for new website.

10) Future Items

- a. 3a/3b Task Force Status – 10 min
- b. Expected Future Roles of the State and Regional Boards, stakeholders, CVSC

CV-SALTS meetings are held in compliance with the Bagley-Keene Open Meeting Act set forth in Government Code sections 11120-11132 (§ 11121(d)). The public is entitled to have access to the records of the body which are posted at www.cvsalinity.org

CV-SALTS Committee Rosters

Executive Committee Membership		2011 22-Apr	2011 12-May
Nomination Category	Name and		
Leadership Partners 1	Pamela Creedon/Jeanne Chilcott Regional WQCB	✓	
	2 Darrin Polhemus, State Water Resources Control Board		
	3 Jose Faria/Ernie Taylor Department of Water Resources		
	4 Lisa Holm, US Bureau of Reclamation	✓	
	5 TBD - Environmental Justice		
	6 TBD - Environmental, Water Quality		
Comm. Co-chairs 1	Parry Klassen, Chair Executive Committee	✓	
	2 Jeff Willett, Vice Chair Executive Committee	✓	
	3 Joe DiGiorgio, Public Education & Outreach Comm.	✓	
	4 Lisa Holm, Technical Advisory Committee	✓	
	5 Nigel Quinn, Technical Advisory Committee	✓	
	6 David Cory, Economic and Social Cost Committee	✓	
CV Salinity Coalition 1	Bobbi Larson, CASA	✓	
	2 Debbie Webster, CVCWA	✓	
	3 Dave Cory, San Joaquin River Drainage Authority	✓	
	4 Steve Hogg, City of Fresno		
	5 Trudi Hughes/Mona Shulman, Ca League of Food Processors	✓	
	6 Tim Schmelzer/Chris Savage, Wine Institute		
	7 Steve Bailey, City of Tracy		
	8 Jeff Willett, City of Stockton	✓	
	9 Linda Dorn, Sacramento Regional CSD		
	10 Dennis Westcot, San Joaquin River Group	✓	
	11 Nick Pinhey, City of Modesto		
	12 Tim Johnson, California Rice Commission	✓	
	13 Phil Govea, City of Manteca		
	14 Parry Klassen, E. San Joaquin Water Quality Coalition	✓	
	15 Mike Nordstrom/Doug Davis Tulare Lake Drainage/Storage Districts	✓	
	16 Karna Harrigfeld, Stockton East Water District	✓	
	17 Renee Pinel, Western Plant Health Association		
	18 Travis Peterson, City of Vacaville		

Participants Identified:

Geoff Anderson, DWR
 Bruce Houdesheldt, NCWA/Sac Valley WQC
 Dan Odenweller, RWQCB
 Danny Merkely, California Farm Bureau
 Emily Alejandrino/Jim Martin, CVRWQCB
 Emily Robidart Rooney, Ag Council
 Gail Cismowski, CVRWQCB
 Jenny Crouse, Ironhouse Sanitary District
 Erick Althorp SSIWQC
 Mark Dorman, Rainsoft Water PWQA
 Mark Felton, Culligan Water and PWQA
 Mark Gowdy, SWRCB, Water Rights
 Rick Staggs, City of Fresno
 Robert Chrobak and Stuart Childs Kennedy/Jenks
 Ron Crites, Brown and Caldwell

Erica DeHollan, LA C
 Tess Dunham, Somach
 Stan Dean, SRCD
 Fern Wilson, City of Vacaville
Jim Martin, RWQCB
Rob Neenan, CA League Food Proc
 Melanie Thomson, CUWA
Leila Khatib, Kennedy Jenks
Sue Giampietro, The Wine Group
Jean-Pierre, J.P., Cativiela, Dairy

Karl Longley, CSU Fresno
 Andy Malone, Wildermuth Env.
 Chad Dibble, CDFG
 David Miller, GEI Consultants
 Gary Carlton, Kennedy Jenks
 Jamil Ibrahim, MWH Global
 Jay Simi, CVRWQCB
 Jodi Pontureri, SWRCB
Claus Suvorkropp, LWA
 Pam Buford, CVRWQCB
Stephen McCord, LWA
 Mark Larsen, Kaweah Delta WCD
 Lou Dambrosio, TWG



State Water Resources Control Board Resolution No. 88-63 states that:

"All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards with the exception of:

1. *Surface and ground waters where:*
 - a. *The total dissolved solids (TDS) exceed 3,000 mg/L (5,000 uS/cm, electrical conductivity) and it is not reasonably expected by Regional Boards to supply a public water system, or*
 - b. *There is contamination, either by natural processes or by human activity (unrelated to the specific pollution incident), that cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices, or*
 - c. *The water source does not provide sufficient water to supply a single well capable of producing an average sustained yield of 200 gallons per day."*

RECOMMENDED CLARIFICATIONS to Implement Section 1 of Res. No. 88-63:

- I. A surface or ground water is probably not reasonably expected to supply a public water system when one or more of the following conditions is met:
 - A) There are no operational water supply intakes located in the water body and there are no approved plans to construct such an intake in the next five years.
 - B) Consistent with SWRCB Res. No. 2006-0008, ephemeral, intermittent, or low flows, together with hydrologic modifications prevent MUN from being attained due to low yield (ex: estimated 7Q10 < 200 gal./day).
 - C) Existing water rights in or below the relevant water body segment make it unlikely that new diversion permits would be issued.
 - D) Federal or state regulations and/or court decisions requiring minimum instream flows make new surface water diversion permits unlikely.
 - E) At least one of the factors identified in 40 CFR 131.10(g)(2) or(4) applies.
 - F) The water body is "under the influence of wastewater" and does not meet the minimum separation distance requirements of the CA Dept. of Public Health.

RECOMMENDED CLARIFICATIONS to Implement Section 1 of Res. No. 88-63 (continued):

- II. A surface or ground water is probably contaminated by natural processes or by human activity if one or more of the following conditions is met:
- A) The California Department of Public Health has declared that the water body is an "extremely impaired source" and has recommended against using it as a drinking water supply. (Ex: Lower San Jacinto River per SWRCB Tech. Comm. WQ 85-1)
 - B) The release of treated sewage effluent make it unlikely that the water body will support an MUN use in the future.
 - C) The water body is on the 303(d) list because one or more pollutants exceed a Maximum Contaminant Level (MCL) or other primary drinking water standard specified by federal or state law.
 - D) At least one of the factors identified in 40 CFR 131.10(g)(1) or (3) applies.
- III. A surface or ground water probably cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices when one or more of the following conditions is met:
- A) Advanced treatment (beyond that required to comply with Title-22) is required to ensure that wastewater meets all applicable MCLs before it is discharged.
 - B) At least one of the factors identified in 40 CFR 131.10(g)(3) or (6) applies.
- IV. A surface or ground water probably can reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices when one or more of the following conditions is met:
- A) There is sufficient reliable dilution available to ensure that water quality meets applicable MUN standards at the nearest water supply intake below the point of discharge.
 - B) Best economically achievable treatment practice is defined as functionally-equivalent to the level of pollutant control and reduction reliably attained by the top 15% of dischargers in the same or similar industry.
 - C) Potable water delivered to the service population meets applicable federal and state regulations using one or more of the following methods: well-head treatment, blending with other readily available supplies, traditional filtration and disinfection, alum addition or other common treatment practices (excluding reverse osmosis, microfiltration and activated carbon filtration) used by the water supply industry.

State Water Resources Control Board Resolution No. 88-63 states that:

"All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards with the exception of:

2. Surface Waters Where:

- a. The water is in systems designed or modified to collect or treat municipal or industrial wastewaters, process waters, mining wastewaters, or storm water runoff, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards; or,*
- b. The water is in systems designed or modified for the primary purpose of conveying or holding agricultural drainage waters, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards.*

RECOMMENDED CLARIFICATIONS to Implement Section 2 of Res. No. 88-63:

- V. A system that is designed or modified to collect or treat municipal or industrial wastewaters, process waters, mining wastewaters, or storm water runoff includes all man-made canals, channels, ditches and drains that were constructed or fortified for the primary purpose of conveying wastewater or storm water runoff in order to protect public health and safety.
- VI. A system that is designed for the primary purpose of conveying or holding agricultural drainage waters includes all man-made canals, channels, ditches, drains or ponds that meet the definitions and criteria set forth for "Category C" waters as established by the Central Valley Regional Water Quality Control Board in Resolution No. _____ adopted in September, 1992.
- VII. A system that is modified for the primary purpose of conveying or holding agricultural drainage waters includes all natural channels, washes, or creek beds that meet the definitions and criteria set forth for "Category B" waters as established by the Central Valley Regional Water Quality Control Board in Resolution No. _____ adopted in September, 1992.
- VIII. The Regional Board will require monitoring to assure that discharges into water bodies deemed to be exempt from the MUN designation do not cause or contribute to an exceedance of any other water quality standards that remain applicable to the water body.
- IX. The Regional Board will require monitoring to assure that discharges into water bodies deemed to be exempt from the MUN designation do not cause or contribute to an exceedance of water quality standards in MUN-designated water bodies downstream of the exempt segment provided that the determination be based primarily on water quality monitoring in the downstream segment.

State Water Resources Control Board Resolution No. 88-63 states that:

"4. Regional Board Authority to Amend Use Designations:

Any body of water which has a current specific designation previously assigned to it by a Regional Board in Water Quality Control Plans may retain that designation at the Regional Board's discretion. Where a body of water is not currently designated as MUN but, in the opinion of a Regional Board, is presently or potentially suitable for MUN, the Regional Board shall include MUN in the beneficial use designation.

The Regional Boards shall also assure that the beneficial uses of municipal and domestic supply are designated for protection wherever those uses are presently being attained, and assure that any changes in beneficial use designations for waters of the State are consistent with all applicable regulations adopted by the Environmental Protection Agency."

RECOMMENDED CLARIFICATIONS to Implement Section 4 of Res. No. 88-63:

- X. Where the Administrative Record reflects that the CV Regional Water Quality Control Board determined, based on sound scientific evidence, that a MUN use could not be attained and elected not to designate certain water bodies MUN, that decision should be documented by an appropriate footnote and reference in the Basin Plan. (Ex.: Tulare Lake groundwater basin?)

- XI. Where the CV Regional Water Quality Control Board has approved a site-specific determination that a given water body or segment meets the definitions and criteria established for Category B or Category C waters, that is sufficient to justify an exemption from MUN provided that there has been no substantial change in the factors and conditions that the Regional Board relied on to make the previous determination. Upon confirmation that a given water body or segment continues to meet the definitions and criteria established for Category B or Category C waters, the Regional Board shall resubmit the list of said water bodies together with the supporting documentation to the State Water Resources Control Board for review and approval.

- XII. U.S. EPA regulations governing the designation of beneficial uses do not apply to ground waters of the State.

RECOMMENDED CLARIFICATIONS to Implement Section 4 of Res. No. 88-63 (continued):

- XIII. MUN uses are "presently being attained" where such uses are occurring, where and when legally permitted to occur, in accordance with all of the following:
- A) A valid water rights permit authorized by the State Water Resources Control Board, and
 - B) A valid 404 permit issued by the U.S. Army Corps of Engineers, and
 - C) Compliance with health and safety regulations enacted by the CA Dept. of Public Health, and the CA Dept. of Water Resources, and
 - D) Conformance with ordinances enacted by legitimate local authorities, including special districts, governing the pumping, diversion and use of water, and
 - E) The water body is not presently included, nor does it meet the recommended requirements for inclusion, on the state's 303(d) list of impaired water bodies, and
 - F) The California Environmental Quality Act (CEQA).

OTHER RECOMMENDATIONS to Facilitate Implementation of 88-63:

- XIV. Surface waters should be re-segmented as appropriate in order to ensure that the MUN designation is applied accurately and precisely throughout the region.
- XV. Ground water basins should be more precisely defined, 3-dimensionally, in order to recognize differences in ambient water quality that may affect when and where a MUN use can occur.
- XVI. A historical MUN use may be de-designated if a reliable alternate source of water is provided to those persons that rely upon the historical source that is being recommended for de-designation.

Homework #2 for CV-Salts Executive Committee

Written Responses Due at Noon (pdt) on Tuesday, May 3rd

Submitted by San Joaquin River Group Authority

- 1) If Agriculture (AGR) is ubiquitous throughout the Central Valley, should we begin with an initial presumption (rebuttable on a site-specific basis) that all surface and ground waters in the region will likely be used for this purpose and should be designated to protect this beneficial use? If not, what factors should be considered to not assign an AGR use to a water body?**

We should begin and end with this assumption. Throughout the Central Valley, all water supplies whether surface or ground waters are used for irrigation of crops, gardens, pastures, you-name-it. Where irrigation is not practiced, the water supplies are often used for animal drinking water and this is part of agricultural uses. How the water supply is used is determined by the quality of the water and this is part of a later question.

- 2) Where a water body is designated AGR, is it appropriate to assume that water quality must be capable of ~~for~~ growing any sort of crop or supporting any type of livestock?**

No. The quality of water used for production agriculture (irrigation and animal production) is an economic question. In most cases the farming practices and cropping patterns are adjusted to the quality of water available. This is not to imply that water quality can be allowed to deteriorate to the detriment of a farming practice but it also can not be expected that a salt or nitrogen sensitive crop can be grown with a water supply that is known to be of poor quality.

- 3) Where crop yields are known to decline in proportion to salinity concentrations, at what threshold (% reduction) is the AGR use "impaired?" "Precluded?"**

There is no straightforward answer to this. The 100% "yield potential" threshold is determined by looking at research information on leaching and water quality. Almost all of this information was developed by Maas and Hoffman when they were at the U.S. Salinity Laboratory. Maas and Hoffman used a best fit equation to predict yield potential and the loss in potential as salinity increases. Most evaluations would use the 100% yield potential but in reality actual yield may be less due to fertilization, weather, soil factors, pest control and other factors. It is impossible to take all these into

account. Most large irrigation project planning efforts use a 90% “yield potential” for economic and feasibility analyses. Most environmental protection efforts and standards setting processes use a 100% “yield potential” as they are not interested in the economic return.

4) If water quality is inadequate to support maximum expected yield for a given crop but is adequate to assure maximum expected yield for another crop, is the AGR use impaired?

There is a need to repeat part of the answer given for Question #2. No. The quality of water used for production agriculture (irrigation and animal production) is an economic question. In most cases the farming practices and cropping patterns are adjusted to the quality of water available. This is not to imply that water quality can be allowed to deteriorate to the detriment of a farming practice but it also can not be expected that a salt sensitive crop can be grown with a water supply that is known to be of poor quality. The evaluation that would be needed is whether the cropping pattern has changed as a result of deteriorated water quality. If the answer to this question is yes, then possibly impairment has occurred. This would not be the case however if the groundwater basin was known to have an unavoidable decline in quality due to rising salinity, then an impairment would not have occurred.

5) If water quality is inadequate to support maximum expected yield using efficient irrigation practices, but maximum expected crop yield can be maintained by increasing the amount of irrigation water applied, is this an acceptable (albeit less desirable) approach for protecting the beneficial use?

This is not protecting beneficial use or less desirable. This is utilizing a management practice (higher leaching fraction) to allow beneficial use to occur. The decision to utilize more water to allow a higher level of beneficial use (greater economic return) is within the decision mechanism of the individual grower. There is no regulation that states a quantity of water available for a particular crop or cropping practice. This will be dictated by water availability, crop pricing and water pricing.

6) At what levels would nitrate concentrations no longer be suitable for an AGR use?

Crop Production: As with salinity, there is a range of crop tolerances to nitrate or nitrogen. The decision to use a particular quality of water for irrigated crop production is an economic question. In most cases the farming practices and cropping patterns are adjusted to the quality of water available. This is not to imply that water quality can be allowed to deteriorate to the detriment of a farming practice but it also can not be expected that a nitrogen sensitive crop can be grown with a water supply that is known

to be of poor quality. The level of nitrate that would impact crop production would need to be evaluated based on the cropping pattern and the production practices used. For example, if you have a groundwater with a known high nitrate level, you would be cautious in how that water supply is used. If you were growing grapes, you would want to avoid the use of the groundwater early and mid-way through the season as you would get excessive vegetative growth and delayed maturity of the grapes. During the fall, or after the grapes are harvested, you would want to utilize the groundwater to ensure that the grape vines had an adequate nitrogen level in the spring of the next season. Another example is that you would want to avoid higher nitrate waters to irrigate winter grains (wheat, barley, oats) in the spring as it will cause a flush of growth that may cause the crop to “lodge” or fall over thus making harvest losses greater. Again these are all management practices that allow the use of various water nitrate levels during the cropping season.

As a general rule, for irrigated agriculture it is always assumed that if $\text{NO}_3\text{-N}$ (nitrate reported in terms of elemental nitrogen) is below 5 mg/L that very few, if any problems with its use will develop. On the other extreme, concentrations above 30 mg/L are likely to cause continuous problems and could be classified as impaired for irrigation use.

Animal Drinking Water: Like irrigated agriculture, there is a range of concentrations that may cause impacts. You need to consider several factors in evaluating nitrate concentrations and using this water for animal drinking water. Most guidelines for $\text{NO}_3\text{-N}$ (nitrate reported in terms of elemental nitrogen) are over 40 years old and show that concentrations less than 100 mg/L are probably safe. This however needs to be evaluated based on the time of year (amount of water consumed daily), age and condition of the animal (lactating, pregnant, young or weak may be more susceptible), feed composition and animal species. For example, the impact of nitrate may be amplified when the forage used is also irrigated with the same water supply. Another example found in the Central Valley is pregnant dairy cows are known to abort their calves if the nitrate levels in the drinking water are high.

7) At what levels would salinity concentrations (EC or TDS) no longer be suitable for an AGR use?

There is no published limit. It depends upon the cropping pattern and the economics of production. For all practical purposes however it is probably close to 5,000 dS/m. Above this, it becomes impractical to leach the salts to a level where even the most salt tolerant crops will be grown. Theoretically you could utilize water above this level but you reach a limit on how much water the soil can infiltrate and therefore it becomes the limiting factor and thus it is impractical to grow that crop. On a more regional level, if you have water above an EC of 3,000 dS/m on most Central Valley soils, it will be very difficult to conduct economic production levels.

8) What, if any, subcategories of the AGR use might be useful to improve water resource management and water quality regulation in the Central Valley?

The answer to this question would require an analysis conducted similar to the one performed by Glenn Hoffman for the South Delta (Hoffman Report). This type of analysis would give you the threshold limits that are likely to allow full production with various qualities of water. This type of analysis however would be very costly and take several decades to perform. In the absence of such an analysis, one could assume that there would be unrestricted use of water for irrigation if the salinity is less than 700 dS/m. This could be considered full AGR use. On the other extreme, any water supply known to be in excess of 3,000 dS/m would be severely restricted in its use for irrigated agriculture. This could be considered a severely limited or restricted level of AGR use and in most cases would only provide incidental AGR use. What is in between these numbers (the bulk of the ground water in the Central Valley) would have varying levels of limitations depending upon the farming practices and farm economics. This could be considered a limited level of AGR use but not one that would be severely restricted by water quality. Animal drinking water would for most practical purposes, follow the same ranges however incidental use of water above 3,000 dS/m would be more widespread in range lands and use of this type of water may be for longer periods.

Homework #2 for CV-Salts Executive Committee

Written Responses Due at Noon (pdt) on Tuesday, May 3rd

- 1) If Agriculture (AGR) is ubiquitous throughout the Central Valley, should we begin with an initial presumption (rebuttable on a site-specific basis) that all surface and groundwaters in the region will likely be used for this purpose and should be designated to protect this beneficial use? If not, what factors should be considered to not assign an AGR use to a waterbody?

I think this is a reasonable and efficient approach. Since ag land draws irrigation water from both surface and groundwater it is integrative. In reality most land uses have adapted over time to the prevailing blend of imported and local water quality – the AGR designation should recognize this.

- 2) Where a waterbody is designated AGR, is it appropriate to assume that water quality must be capable for growing any sort of crop or supporting any type of livestock?

No – as mentioned above – site conditions dictate the size and quality of the groundwater resource which is typically blended with surface supply with which to grow a crop. Farmers have adapted to these conditions and will typically grow the most high value crop they can cognizant of prevailing conditions.

- 3) Where crop yields are known to decline in proportion to salinity concentrations, at what threshold (% reduction) is the AGR use "impaired?" "Precluded?"

Will vary – but should be within a range where the costs of production exceed the return to crop yield. This will vary between crops and may not be a linear response. Difficult to come up with a single value.

- 4) If water quality is inadequate to support maximum expected yield for a given crop but is adequate to assure maximum expected yield for another crop, is the AGR use impaired?

Only if there is a substantial history of cultivation of that crop. Remember that crop yields can also respond to specific ions such as boron – it is difficult to discern which yield reducing factors are in play. What about GM crop varieties? Especially those crops bred for salt tolerance. Perhaps set the threshold for the most widely grown crop in the region.

- 5) If water quality is inadequate to support maximum expected yield using efficient irrigation practices, but maximum expected crop yield can be maintained by increasing

the amount of irrigation water applied, is this an acceptable (albeit less desirable) approach for protecting the beneficial use?

Higher crop yields are not protected by simply applying more water. It is more critical to relieve plant stress locally – this is more effectively done with drip irrigation – especially subsurface drip. Response to improved irrigation technologies is well established. These technologies are also highly efficient.

- 7) At what levels would nitrate concentrations no longer be suitable for an AGR use?

When nitrate becomes the dominant anion in water supply or when excessive leaching of nitrate endangers rural groundwater sources. Crops can tolerate high levels of nitrate.

- 8) At what levels would salinity concentrations (EC or TDS) no longer be suitable for an AGR use?

Typically above 1250 ppm for direct application and 2500 ppm as a blended supply (Westlands Water District farmers Fall, 1998).

- 9) What, if any, subcategories of the AGR use might be useful to improve water resource management and water quality regulation in the Central Valley?

*Could be combined with (a) irrigation technologies (drip, furrow, sprinkler)
(b) salt tolerant and salt sensitive crop designations*

Homework #2 for CV-Salts Executive Committee

Written Responses Due at Noon (pdt) on Tuesday, May 3rd

Reclamation Responses

- 1) If Agriculture (AGR) is ubiquitous throughout the Central Valley, should we begin with an initial presumption (rebuttable on a site-specific basis) that all surface and groundwaters in the region will likely be used for this purpose and should be designated to protect this beneficial use? If not, what factors should be considered to not assign an AGR use to a waterbody?

Not sure. But I think there could be an assessment of whether conditions exist for potential AGR (soil type, slopes, climate, precip/water availability) – then could have an existing and potential AGR (are there areas that have not been exploited, or would we be moving into marginal quality areas with new ag?) I also think there could be salinity-tolerance level AGR designations in theory. Currently, do severely impaired lands or retired lands retain the AGR designation or are they listed as potential AGR until it becomes economically feasible to reclaim the land for agricultural use?

- 2) Where a waterbody is designated AGR, is it appropriate to assume that water quality must be capable for growing any sort of crop or supporting any type of livestock?

No, I think we have developed a water system based on certain assumptions and our designations should take that into account in setting site-specific objectives. Also there must be some recognition of precipitation expectations, drought recurrence, and supply reliability – very explicitly state the conditions under which AGR can occur and when it could expect to achieve less than 100% yield.

- 3) Where crop yields are known to decline in proportion to salinity concentrations, at what threshold (% reduction) is the AGR use "impaired?" "Precluded?"

I don't know. Is this an economics question depending on the crop? Are there other reasons for growing the crop which makes economics (and thus yield) a secondary consideration?

The other way to go with this is based on the hydrology variation I described in 2 – so hypothetically, say 40% of the time is wet and you get 100% protection, but when we slide into drier and then prolonged dry conditions there could be some acceptable or already agreed-to expectation of yield reduction. This is tied back to "reasonable" protection. Developing the context of what is "reasonable" protection under what conditions while balancing "reasonable" protection of other uses of the water.

- 4) If water quality is inadequate to support maximum expected yield for a given crop but is adequate to assure maximum expected yield for another crop, is the AGR use impaired?

That is one way to describe it. Or we could set up sub-categories recognizing the suitability of the existing water quality to existing crops and relieve the state of expectations that more vulnerable crops have to be protected as potential uses – but I would do this in the context of evaluating trade-offs with other beneficial uses or with the water supply reliability versus water quality trade-off (i.e. wouldn't mind a little salt if I could just get some water to keep my trees alive or don't expect to grow beans in the second year of a drought scenarios). I think the AGR use has to be a little more dynamic, since AGR has some degree of adaptability that other beneficial uses don't have. Perhaps looking at the methodology used for the annual agricultural allocation forecast which takes into consideration factors such as water supply availability and meteorological conditions could be tied to a category of crops that can be grown without or with minimal impact.

- 5) If water quality is inadequate to support maximum expected yield using efficient irrigation practices, but maximum expected crop yield can be maintained by increasing the amount of irrigation water applied, is this an acceptable (albeit less desirable) approach for protecting the beneficial use?

Depends on your water supply availability, where the return flow is going, and what your other beneficial uses that you are balancing. But I can see this being an acceptable (and even currently practiced) approach.

- 7) At what levels would nitrate concentrations no longer be suitable for an AGR use?

I don't know.

- 8) At what levels would salinity concentrations (EC or TDS) no longer be suitable for an AGR use?

There are tables in the Hoffman report and in the Ayers and Westcot report as to salt sensitivity. I think the San Joaquin Drainage Authority could give you a reasonable number, but it depends on whether you are assuming the salt will build up in the groundwater below the crop or whether it will be removed. (I suppose our San Luis Drainage Feature Reevaluation analysis may also have some information, but I didn't have access to that in time to inform this assignment).

- 9) What, if any, subcategories of the AGR use might be useful to improve water resource management and water quality regulation in the Central Valley?

I think categories that take into consideration the factors I've described above would be incredibly helpful towards improving water (and other) resource management.

Homework #2 for CV-Salts Executive Committee

Written Responses Due at Noon (pdt) on Tuesday, May 3rd

Central Valley Water Board Responses.

Clarification: *Note that in the Sacramento/San Joaquin Basin Plan, AGR encompasses both Irrigation Supply and Stock Watering beneficial uses and a specific water body may not always have the same designation for both (e.g. the Sutter Bypass and North Fork of the American River are both designated for “existing” irrigation supply but not designated for stock watering). In contrast, the Tulare Basin Plan does not distinguish between the two and only designates the combined AGR.*

- 1) If Agriculture (AGR) is ubiquitous throughout the Central Valley, should we begin with an initial presumption (rebuttable on a site-specific basis) that all surface and groundwaters in the region will likely be used for this purpose and should be designated to protect this beneficial use? If not, what factors should be considered to not assign an AGR use to a waterbody?

Yes. As an example,, “stock watering, or support of vegetation for range grazing,” would apply to most, if not all, remote, northern Sacramento Valley mountain streams that are currently not designated ARG.

Rebuttal should be based on general criteria developed and approved by the Board through the Basin Planning process. Note that both the Sacramento/San Joaquin and Tulare Lake Basin Plans, include language that provides criteria to make exceptions and/or allow limitations to the beneficial use designations “. . . parallel to Resolution No. 88-63 exception criteria . . . ” (page II-3 in both documents). For AGR the criteria are as follows:

1. *There is pollution, either by natural processes or by human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for agricultural use using either Best Management Practices or best economically achievable treatment practices, or*
2. *The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day, or*
3. *The aquifer is regulated as a geothermal energy producing source or has been exempted administratively pursuant to 40 CFR, Section 146.4 for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided that these fluids do not constitute a hazardous waste under 40 CFR Section 261.3.*

Other factors that should be considered are discussed in more detail later.

- 2) Where a waterbody is designated AGR, is it appropriate to assume that water quality must be capable for growing any sort of crop or supporting any type of livestock?

No. Imported water of better quality has allowed cropping changes in areas that historically supported more salt tolerant species. A review of soil types, climate and natural water supply should be conducted as part of a process for determining a reasonable suite of crops that should be protected as part of irrigation supply use in a given sub-area. Livestock may be a separate beneficial use consideration.

- 3) Where crop yields are known to decline in proportion to salinity concentrations, at what threshold (% reduction) is the AGR use "impaired?" "Precluded?"

This question appears to be more related to economic viability and the concept of "tipping potential" brought up during the MUN discussion by the agricultural industry. This question may also relate to the concept of what is an "acceptable" reduction in yield during drought conditions.

- 4) If water quality is inadequate to support maximum expected yield for a given crop but is adequate to assure maximum expected yield for another crop, is the AGR use impaired?

Assuming that appropriate AGR uses were designated for sub-basins (as alluded to in question #2 above), AND a threshold (objective) is adopted to protect that use (e.g. water quality at a specific yield reduction), the impairment determination will be based on the salinity impact on the most salt sensitive crop that fits that particular AGR use definition. Anti-degradation also applies and we as an agency are required to insure discharges don't increase concentrations above background levels "unless it is in the best interest of the people". So while "impairment" may be linked to the federal 303d policy and specific water quality objectives for surface water, we are still bound by additional California policy to protect both surface and groundwater from degradation. An exception may be needed during drought conditions.

- 5) If water quality is inadequate to support maximum expected yield using efficient irrigation practices, but maximum expected crop yield can be maintained by increasing the amount of irrigation water applied, is this an acceptable (albeit less desirable) approach for protecting the beneficial use?

This appears to be more of an implementation/policy issue than a beneficial use issue. If appropriate AGR beneficial uses and objectives are adopted per question #2 above, but the grower determines they can grow a more salt sensitive crop by more aggressive leaching--as long as the beneficial uses of downstream surface water bodies and resident groundwater are not impacted—it becomes their economic decision balanced with available water supply that is under discussion rather than protecting the beneficial use.

- 6) At what levels would nitrate concentrations no longer be suitable for an AGR use?

Staff would need to defer to the ag industry and technical experts to support any findings.

- 7) At what levels would salinity concentrations (EC or TDS) no longer be suitable for an AGR use?

Again, the answer would depend on specific sub-basin conditions, sensitivity of various crops, and timing of use. Would need input from ag industry and technical experts.

- 8) What, if any, subcategories of the AGR use might be useful to improve water resource management and water quality regulation in the Central Valley?

Sub-categories of uses will not be effective without also attaching appropriate water quality objectives to that sub-category—otherwise, site specific challenges can continue to be anticipated. Categories should be explored that are regionally based (e.g. based on crops that could be grown for the soil/climate/natural salinity levels that might be limiting). There may also be benefit in designating some water bodies within farms or districts for “AGR reuse” to allow the flexibility to move poor quality drainage around for blending and reuse or “AGR recycle” to allow recycled water to irrigate crops that are not in the human food chain.

For the mountainous areas of the Sacramento Valley, a subcategory of AGR specific to “range grazing” could be a step towards improved water resource management and water quality. If established with water quality objectives specific to the sub-category, it could help to address some of the concerns with non-point source issues associated with grazing impacts on federal, state and private lands.

Homework #2 for CV-Salts Executive Committee

Written Responses Due at Noon (pdt) on Tuesday, May 3rd

- 1) If Agriculture (AGR) is ubiquitous throughout the Central Valley, should we begin with an initial presumption (rebuttable on a site-specific basis) that all surface and groundwaters in the region will likely be used for this purpose and should be designated to protect this beneficial use? If not, what factors should be considered to not assign an AGR use to a waterbody?

No. Uses should never be designated by the stroke of a pen. The factors to designate or not designate should be clearly delineated then decisions made based on those factors and the science available. The level of science needed to designate should be equivalent to that required to de-designate.

The need for subcategories of uses should also be determined up front, to the extent practicable.

Some factors that might be considered when designated/not designating/or severely limiting an AGR use include:

1. Reliability of the water source (i.e. seasonal waterbody where water is not available during the irrigation season).
2. Salinity or other water quality constituent that may limit or prohibit use (e.g. Boron).

- 2) Where a waterbody is designated AGR, is it appropriate to assume that water quality must be capable for growing any sort of crop or supporting any type of livestock? (Emphasis mine – both in question and response)

No, this is not consistent with the water code that requires reasonable protection of beneficial uses and for the water quality criteria to consider various factors:

“The Legislature further finds and declares that 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.” (CWC §13000)

“Water quality objectives” means the limits or levels of water quality constituents or characteristics which are established for the **reasonable** protection of beneficial uses of water or the prevention of nuisance within a specific area.” (CWC§ 1350(h))

“Each regional board shall establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, 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 the quality of water available thereto.
- (c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which 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.” (CWC §13242)

There are many factors that go into determining if a crop or livestock is viable in a certain area, including soil type, climate, water supply, water quality, and other factors. These must be considered. Those crops or livestock that are not viable should not be considered.

All factors for viability should be considered before determining the appropriate water quality to support the use. Factors in CWC §13242 must be used as a basis in establishing the water quality necessary for the reasonable protection of that use.

It is also important to note that there may be several sources of water that could support a specific AGR use: groundwater, local surface supplies, imported surface and/or groundwater, recycled water, etc. One water source may make that crop viable, where another may not. Great care should be taken not to assign an objective to a waterbody to protect an AGR use that, would another source of the water not be available, would not be viable.

- 3) Where crop yields are known to decline in proportion to salinity concentrations, at what threshold (% reduction) is the AGR use "impaired?" "Precluded?"

Unknown. However, in most cases, there are multiple factors (climate, soil, rainfall, etc.). These factors work together to create declining yields. It may be important to balance all or describe conditions of other assumptions (i.e. normal rainfall, etc.), before answering the above question or determining what is appropriate.

- 4) If water quality is inadequate to support maximum expected yield for a given crop but is adequate to assure maximum expected yield for another crop, is the AGR use impaired?

No. See responses above.

- 5) If water quality is inadequate to support maximum expected yield using efficient irrigation practices, but maximum expected crop yield can be maintained by increasing the amount of irrigation water applied, is this an acceptable (albeit less desirable) approach for protecting the beneficial use?

Not answering the question but asking one: Is this truly a water quality issue, or is it choice of crops, soil, other factors or a combination thereof?

- 7) At what levels would nitrate concentrations no longer be suitable for an AGR use?

Unknown. This is likely a crop-specific answer. However, it should be recognized that nutrients are essential for plant growth and are commonly added through fertilization. Recycled water can provide many nutrients and offset fertilizer use, which has water, energy and other environmental benefits.

- 8) At what levels would salinity concentrations (EC or TDS) no longer be suitable for an AGR use?

This is crop specific.

- 9) What, if any, subcategories of the AGR use might be useful to improve water resource management and water quality regulation in the Central Valley?

As mentioned above, it may be important to differentiate what the water sources to each of the crops are, as objectives are applied to the waterbody. It does not make sense to apply an objective for a crop to a local waterbody (such as Salt Creek) when crops are grown using imported water from the Sierra watershed, or applying that same objective to groundwater where there is high mineralization or natural hardness.

Homework #2 for CV-Salts Executive Committee

Written Responses Due at Noon (pdt) on Tuesday, May 3rd

- 1) If Agriculture (AGR) is ubiquitous throughout the Central Valley, should we begin with an initial presumption (rebuttable on a site-specific basis) that all surface and groundwaters in the region will likely be used for this purpose and should be designated to protect this beneficial use? If not, what factors should be considered to not assign an AGR use to a waterbody?

Yes. However criteria similar to those listed in Resolution 88-63 would arguably make sense. I would think the case could be made that to the extent MUN and AGR designation and de-designation criteria are similar, the better.

- 2) Where a waterbody is designated AGR, is it appropriate to assume that water quality must be capable for growing any sort of crop or supporting any type of livestock?

No. See below response(s) for some particulars.

- 3) Where crop yields are known to decline in proportion to salinity concentrations, at what threshold (% reduction) is the AGR use "impaired?" "Precluded?"
- 4) If water quality is inadequate to support maximum expected yield for a given crop but is adequate to assure maximum expected yield for another crop, is the AGR use impaired?
- 5) If water quality is inadequate to support maximum expected yield using efficient irrigation practices, but maximum expected crop yield can be maintained by increasing the amount of irrigation water applied, is this an acceptable (albeit less desirable) approach for protecting the beneficial use?

This answer applies to Questions 3, 4, and 5:

Given the variety of plants and animals that can be farmed for profit and the different tolerances they have for different constituents, each with their own concentration ranges, which depend on many local variables, it is likely to be a recipe to study, and then micromanage (deemed) acceptable uses, practices and profit margins..... *to the point of inaction.*

Perhaps a general goal of protecting say, at least 80% of the product value, where possible, could guide salt management plans. And, as alluded to in the answer to Question 1, some consideration should be given to unifying the MUN and AGR protection criteria to the extent possible if the opportunity presents itself...for example

choosing a WQO of around 900-1000 (ec) that would serve to protect both AGR and MUN on a fairly broad basis may be desirable.

In the end, each salt management unit will have to pick a WQO number, or range, to manage each constituent to, and then let the users sort out crop types, irrigation practices, etc. to their best benefit given the options available to them. It is likely CV_SALTS may find it necessary to provide policy guidance on appropriate WQO levels the various management units may set in order to manage salt on the unified Region 5 level. Those who provide exports from the Region may also wish to weigh in on such policy decisions, but just like any other particular local user, they may not be able to have all of their conceivable uses remain completely uncompromised, all of the time.

- 7) At what levels would nitrate concentrations no longer be suitable for an AGR use?

For livestock.... presumably some level would trigger methemoglobinemia concerns similar to human infants...I don't know what the number is though. For certain crops (ie sugar beets)..... I understand there are certain times in the growth cycle nitrate is a problem....and I think that number may be even less than 10 mg/l as N.

So, again, it may require making a policy decision that a certain "broadly protective" concentration level will be the WQO that SNMPs must manage to for nitrate.

[Note: There is a possibility the Aquatic life criteria for things like spawning fish may set an even lower level for some surface waters, and their tributaries, than would otherwise apply to protect MUN and/or AGR]

- 8) At what levels would salinity concentrations (EC or TDS) no longer be suitable for an AGR use?

Please refer to the answer to Question 3, 4, and 5 as a preface...then I would suggest this number could go quite high...perhaps to levels cited in Resolution 88-63, for instance.

- 9) What, if any, subcategories of the AGR use might be useful to improve water resource management and water quality regulation in the Central Valley?

I'm not sure this wouldn't lead to the micromanagement trap discussed above...I think it may be a much better management approach to pick a WQO that is broadly applicable, and then let the multitude of users decide how to categorize the options available to them for maximum benefit.

Homework #2 for CV-Salts Executive Committee

Written Responses Due at Noon (pdt) on Tuesday, May 3rd

Submission from AG Producers and Processors

- 1) If Agriculture (AGR) is ubiquitous throughout the Central Valley, should we begin with an initial presumption (rebuttable on a site-specific basis) that all surface and groundwaters in the region will likely be used for this purpose and should be designated to protect this beneficial use? If not, what factors should be considered to not assign an AGR use to a waterbody?

The AGR designation may not be appropriate in some localized areas where land uses preclude agricultural uses. However, it is likely that within the Central Valley region, most surface and groundwaters currently support, or are capable of supporting some level of AGR beneficial use. The primary concern with the AGR beneficial use is, what are the appropriate water quality objectives for salinity to support the localized AGR beneficial uses, not necessarily the AGR beneficial use designation itself.

- 2) Where a waterbody is designated AGR, is it appropriate to assume that water quality must be capable for growing any sort of crop or supporting any type of livestock?

No, water quality objectives should be consistent with reasonably, feasible commercial agricultural uses in the site vicinity, based on a variety of factors, including but not limited to: soil type, rainfall, climate, etc.

- 3) Where crop yields are known to decline in proportion to salinity concentrations, at what threshold (% reduction) is the AGR use "impaired?" "Precluded?"

While the Regional Board should not condone water quality degradation, there are a myriad of factors that contribute to crop yields, and it may be difficult to directly correlate a yield reduction with water quality alone. Further, the Regional Board is required to reasonably protect beneficial uses, thus indicating that requiring water quality objectives to be set at the most stringent level in order to protect 100% of crop yield may not be appropriate.

- 4) If water quality is inadequate to support maximum expected yield for a given crop but is adequate to assure maximum expected yield for another crop, is the AGR use impaired?

Again, causes of yield decreases are manifold. Impairment may need to be assessed relative to crops grown, management methods employed, and actual yields on other properties in the immediate vicinity.

Further, impairment of the AGR beneficial use should be determined after identifying appropriate and relevant water quality objectives. If the appropriate water quality objectives for the area of interest are exceeded, then the AGR beneficial use is impaired. Determination of appropriate water quality objectives should be considered on a localized, watershed, or sub-regional basis – not Valley wide. To determine the appropriate water quality objective, consideration should be given to the pre-dominant crops in the area and others that are reasonably, feasible on a commercial basis. The AGR beneficial use should not be defined to protect “back-yard gardens” that include exotic crops for the area of interest.

- 5) If water quality is inadequate to support maximum expected yield using efficient irrigation practices, but maximum expected crop yield can be maintained by increasing the amount of irrigation water applied, is this an acceptable (albeit less desirable) approach for protecting the beneficial use?

Uncertain as to the question being asked, and the principle proposed.

- 6) At what levels would nitrate concentrations no longer be suitable for an AGR use?

Nitrogen loading is generally not associated with crop toxicity. Growers should consider the concentration of nitrate in the water supply in determining the crops needs for fertilizers.

- 7) At what levels would salinity concentrations (EC or TDS) no longer be suitable for an AGR use?

As mentioned previously, the effect of salinity on crops varies by crop species and other site factors. Salinity water quality objectives should vary based on the pre-dominant crop types, and other reasonably, feasible commercial crops that may be grown in the area. Also, salinity of TDS/EC needs to consider individual ions such as sodium, chloride, and boron, as well as crop type.

- 8) What, if any, subcategories of the AGR use might be useful to improve water resource management and water quality regulation in the Central Valley?

Subcategories could potentially be defined for specific geographic conditions, e.g. agricultural land immediately adjacent to stream. Specific Basin Plans could set different limits for AGR water quality. Or, the Basin Plans could include a process for establishing site-specific water quality objectives for protecting the agricultural beneficial use in that area.



**Schedule of Policy Discussions
for the CV-SALTS Executive Committee Meetings**

Meeting Date	Policy Area
March 17	Kickoff Meeting to Confirm Priority Tasks
April 12	Clarifying the MUN Use Designation
May 12	Clarifying the AGR Use Designation
May 26	Water Quality Objectives for Nitrate and Salinity
June 16	Antidegradation Reviews & Maximum Benefit Demonstrations
July	Draft Basin Plan Amendments
August	Revise Basin Plan Amendments
September	Finalize Basin Plan Amendments