



May 14, 2014

Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814

Subject: Comments for Expert Panel Consideration
commentletters@waterboards.ca.gov

Dear Chairman and Members of the Expert Panel:

California Citrus Mutual ("CCM") is a citrus producer's trade association whose 2,200 grower members comprise 75% of California's 275,000 acres, \$2 billion citrus industry. The mission of CCM is to represent citrus producers on matters that affect their economic livelihood and provide them with necessary information to enhance their ability to profit from their work. This includes state, federal and international regulatory and legislative matters, marketing, trade, education, and many other important areas intended to assist a citrus grower in his citrus operation and business. On behalf of the California citrus industry, we appreciate this opportunity to comment on the questions put before the Agricultural Expert Panel assembled by the Irrigation Training and Research Center of the California Polytechnic State University, San Luis Obispo, under contract with State Water Board.

CCM recognizes and appreciates the personal sacrifice the panel members are making to serve. We are optimistic that the combined experience and expertise that each of you brings to addressing the questions put before you will result in a constructive final product. It is disappointing that the Expert Panel was not convened prior to the adoption of the General Orders, rather than after the fact.

The charges to the Expert Panel are to assess existing agricultural nitrate control programs and develop recommendations, as needed, to ensure ongoing efforts are protective of groundwater quality. The second charge to provide a more thorough analysis and long-term statewide recommendations regarding many of the issues implicated in State Water Board Order WQ 2013-0101, including indicators and methodologies for determining risk to surface and groundwater quality, targets for measuring reductions in risk, and the use of monitoring to evaluate practice effectiveness.

It is the second charge that gives the Expert Panel the latitude to incorporate into its report, recommendations for achieving a healthy, sustainable statewide water supply that links surface water and groundwater into a long-term plan that will meet California's expanding water needs into the future. A May 2014 report by the California Water Foundation, "Recommendations for Sustainable Groundwater Management", states:



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Groundwater provides about 40% of California's water supply during an average year, and likely up to 60% or more during droughts such as this year.

Volatility of available surface water supplies due to impacts of climate change and environmental protections is increasing pressure on groundwater.

Groundwater and surface water are closely interconnected parts of California's water management system. Groundwater use is affected by surface water availability, and surface water flow can be diminished by groundwater pumping. While groundwater issues must be addressed, that should occur within the context of the water system.

Quality and supply cannot be uncoupled.

Questions for the Panel

Vulnerability and Risk Assessment

We agree programs are most effective when they are able to focus attention and requirements on those discharges and dischargers that pose the highest risk or threat.

1. Within the ILRP regulatory program risk and vulnerability can best be mitigated by determining and monitoring best management practices. The third-party coalitions are in the best position to monitor and identify growers whose practices may not be protective of surface and/or groundwater. The third-party coalitions are localized and have the greatest knowledge of the unique characteristics of their area and are therefore the best equipped to assess vulnerability and work with growers to implement or sustain protective practices.
2. During the public hearings there was much attention to the approaches that should be taken to assessing risk to or vulnerability of groundwater.
 - a. The Nitrate Hazard Index and the Mass Balance methods were discussed extensively. Both methods have practical applications as management tools in the hands of growers. However, neither was designed to be, nor should either be a regulatory tool.
 - b. If the panel is not able to identify a superior regulatory tool, it should recommend against using these methods to assess risk and rather recommend research to develop an accurate indicator that factors in specific soil characteristics, irrigation efficiency and cropping systems. Getting no information and knowing you don't know something is preferable to using assumptions based on false information to regulate an industry.
 - c. Nitrogen Consumption Ratio is an unachievable number given current science. Growers base their nutrient applications on NEED, as determined by recommendations informed by crop specific scientific research and their historical knowledge of their field or grove. Until there are accurate methods of determining consumption the regulators will be
 - d. requiring inaccurate data and regulating on false assumptions that will have significant negative impacts on growers. It would be preferable for growers to have a nutrient management plan and document that they are following their plan; similar in practice to food safety plans, which are now being implemented by some growers.
 - e. Farm size is not an indicator of risk.

3. In Region Five the Coalitions established under the Ag Waiver Program were very effective in identifying and working with growers to correct exceedances in surface water discharges. Having been proven effective the surface water component of ILRP is mostly unchanged from the Waiver Program.

Application of Management Practices

6. The citrus industry has made significant advances in nutrient and water management over the last fifteen years. It is estimated that somewhere between 80 and 90 percent of the citrus acreage utilizes drip or micro-jet irrigation. Excess nitrogen is detrimental to fruit quality, so growers closely monitor nitrogen levels in their soil and water. They factor available N from these sources into their nutrient management to avoid over applying N. Tissue testing is done several times each year and are used to meter N as needed. Foliar applications of nutrients are common in the citrus industry because citrus rapidly absorbs these nutrients and the trees respond quickly. This reduces the amount of supplemental N that goes on the ground.
7. Evaluation of management practices
 - a. Mass Balance calculations and tracking nitrogen applied
 - i. Using Mass Balance for nitrogen applied to citrus creates major challenges and dictates that assumptions be used because the science is not available to accurately determine where the N goes, and therefore what is potentially available to be leached. This is further complicated because citrus is an evergreen tree and at certain times of the year may be carrying two crops. This fact is going to create problems for citrus growers if they are required to use the nitrogen management budgets in their current form.
 - ii. Using Mass Balance calculations as currently being presented for the soil is faulty. As presented by the Regional Board assumptions are called for so unless all variables are accounted for and accurately measured the resulting potential number available for leaching will in all probability be over stated.
 - iii. Nitrates can certainly be measured in irrigation water, but this only helpful in determining risk if the destination of that nitrogen can be accounted for in a mass balance equation without forcing an assumed number to groundwater.
 - iv. Measuring what is removed in the crop is only one component of the mass balance equation. That number and pounds applied are the easiest to pin down but using those two numbers alone to come up with a ratio or mass balance do not give an accurate measure of risk and should not be used as a regulatory tool.
 - v. Estimation of losses. As already stated, estimates and assumptions should be avoided in regulation.
 - b. Templates are fine as long as they do not rely on assumptions and they provide flexibility for differences between regions and different crops.
 - c. Nitrogen balance ratios vary from crop to crop. They can be a useful tool for identifying normal ranges for applied N on a crop by crop basis. A ratio outside the normal or average range for a specific crop could be an indication to the third-party coalition that further investigation of specific grower or field was warranted.

- d. Nutrient management plans are a tool for growers to use to document they are considering actual need and all potential sources of N and only applying supplemental N at the rate it is needed to achieve production goals.
8. Continued research in the area of crop specific nitrogen requirements and timing of uptake incorporated with irrigation management will result in benefit based programs for educating and training growers. Growers are receptive to adopting practices that both improve their bottom line and are protective of the environment. Training and then monitoring that best practices are being implemented is the best approach to achieving the objective of the regulations.

Verification Measures

9. Written plans incorporating best practices accompanied by documentation that the plans are implemented is the best way to verify effective practices are being followed.
10. In evaluating the verification measurements the Panel should keep in mind the vast geological differences within the regions and the varied cropping systems. One size certainly does not fit all. Consideration should be given to requiring that the means of verification be appropriate for local conditions. In some case one of the options "a" through "f" might be appropriate in other regions it may be that combination of the options is more appropriate.

Thank you for the opportunity to provide comment on the questions put before the Expert Panel.

Sincerely,



Bob Blakely,
Director of Industry Relations.