

Key points on 3/1/2016 by Charles Burt of Cal Poly ITRC, regarding the Draft Order.

Technical Recommendation by the Ag. Expert Panel			
	Adopted?	Comment	
1	Yes	Treat the challenge as a non-point pollution problem	
2	Yes	The concept of "Vulnerability Areas" ignores the fact that nitrate leaching is a fact of life for all irrigation; therefore, the plans should apply across the board	
3	Yes	An (Applied/Removed, or A/R) ratio is the most pragmatic metric for performance	
4	Yes	A/R ratios for single years can be misleading because of strange precipitation patterns, residual N, crop rotations, etc.	
5	Yes	Discard the concept of "vulnerability" areas; N leaching challenges are universal	
6	Yes	Irrigation management must be tied to any nitrate management program	
7	Yes	Complex models of root zone nitrogen balance cannot be utilized for real-time management by farmers.	
8	Yes	The nitrate status of groundwater under fields does not necessarily indicate the quality of nitrogen management in overlying fields.	
9	Close	It is understood that there must be something regarding adoption of practices, to makes the program legal. But the Ag. Expert Panel rejected the notion that a simple checklist of practices has significant value.	
10	Yes	Trend monitoring of groundwater nitrate concentrations to is needed track general aquifer conditions over multiple years.	
Implementation Recommendations by the Ag. Expert Panel.			
	Adopted?	Comment	
1	No	Truly comprehensive customized water/fertilizer management plans are needed The training and requirements under the draft order are not very demanding. However, there can be a good rationale for not spending too much on this at first. If it turns out that farmers really change their practices largely through awareness and peer pressure, then the argument could be made that heavy investment in customized planning and preparation is not necessary. The fallback is this: Perhaps a robust plan is only needed for a small percentage of individuals if they clearly do not meet eventual targets.	
2	No	Qualified "Specialists in INMP" must have passed serious certification exams rather than simply be pest control advisors (PCAs) who sit in a class to receive qualification. Clearly, there is no serious "certification" process. The fundamental question was raised above: Will the program succeed with rigorous training and certification standards? But one must be clear - just sitting in a short class doesn't make one an expert, by any means.	
3	No	Reporting of key values (i.e., crop type, acreage, total nitrogen applied, and total nitrogen removed) by farms will be made to the coalitions rather than to the Board. This is a huge red flag, which might be a shame because the A/R ratio idea has huge implications for nitrogen, water, and energy management. It also has the potential to be a relatively simple metric. The Ag. Expert Panel was very concerned that there would be an over-reach for data at the state level, which is why it promoted the third party approach. Yes, in the draft order the data is given to the third party.....but the third party needs to send it on to the state (same thing, in the end). On one hand, the Board needs documentation. BUT...if that information (yields, nitrogen applied, crop, and field location) are available to the public, there will be very serious concerns, and in my personal opinion, inevitable abuse and misuse of the data. This absolutely needs to be clarified. If this is public information that can be obtained by anyone using the Freedom of Information Act, or any other mechanism, it will undoubtedly cause bitter resentment by the Agricultural Community. The real question is this: WHAT MINIMUM INFORMATION IS NEEDED BY THE BOARD TO KNOW IF THERE IS COMPLIANCE? My argument is that they don't need to know the yields or the fertilizer amounts. They don't need to know specific fields, but they do need to know the mix by farm so they have a general idea of the location. To eventually define reasonable A/R ratios, the Water Board will need (1) A/R ratio, (2) field size, (3) crop type, and (4) general locations. They do NOT need to know the two values that go into the A/R ratio computation (Yield, and applied N). They do not need to know the specific field location. General geographic area?...Yes. Would lots of information be nice for statistics for all sorts of purposes? Sure. Statisticians love to make charts and graphs and so on. But is it necessary for regulation? No. The Board always retains the right to conduct audits if it feels it needs to obtain verification. Bottom line: There are 2 major issues here: (1) Only asking for what is absolutely necessary to do a reasonable job, and (2) protecting privacy.	
4	No	Procedures for measuring the A/R ratio need to be defined The Ag Expert panel thought that there should be guidance given as to how large a sample, how it is collected, how many samples, etc.	
5	No	The program will only succeed if there is a serious, comprehensive education program of advisors. Development of a very strong, comprehensive, and sustained educational and outreach program is needed. Such a program will require different materials and presentation techniques for different audiences, such as individuals who may need certification, managers of irrigation/nutrient plans, irrigators, and farmers/managers. The level and quality of effort that is needed has been grossly under-estimated and under-funded.	
6	??	Use multi-year reported values and monitored trends by the coalitions to inform the agricultural community of progress, to improve understanding of what is reasonable to attain and expect, and to sharpen improvement efforts Unsure if this focus has been retained	
Philosophy of the Ag. Expert Panel Regarding Implementation and Reporting			
Advances can be made immediately. However, it will take many years to develop and implement a complete program. Education and knowledge transfer must be on-going. There must be a strong appreciation by the regulating agencies of such facts as:			
a. Historical university and consultant recommendations for nitrogen applications have focused on maximizing yield, rather than simultaneously minimizing nitrate leaching.			
b. Appropriate A/R values to be expected under different climate, crop, and other conditions, are essentially unknown.			
c. Information of existing A/R ratios is minimal.			
d. More fundamentally, it has not yet been determined how to best measure the nitrogen removed via harvest, for proper reporting of the A/R ratios for a wide assortment of crops.			
e. From the above, it is clear that there is significant work to be done before A/R ratios will begin to broadly provide useful guidance to the agricultural community, and even more before they can reasonably be used for regulatory purposes. Nevertheless, the Panel believed that this is the correct direction to pursue.			
Rather than focusing on obtaining "sufficiently granular" data for regulation of individual growers at this point, the focus should be on development of a socially acceptable and technically correct and robust program that will still require many years with major shifts in knowledge, research, training, and farming practices.			