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September 9, 2013

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State Water Resources Control Board
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commentletterswaterboards.ca.qov

Subject: Comments to A-2209 (a) -(e) - September 10, 2013, Board Meeting."

Dear Sir/Madam:

Thank you for the opportunity to provide comment on the State Water Resources Control Board (SWRCB) Petition A-2209 (a) – (e) which is the second draft order to amend the Central Coast Regional Water Quality Control Board (RWQCB) Agricultural Order, RB3-2012-0011.

KMI is a small consulting firm that provides consulting services to assist growers to comply with water quality regulations, to be better land managers and to become more active participants in the agricultural problem solving process.

KMI works with growers toward achieving the following goals:

- Every person should have access to safe drinking water.
- Agricultural productivity should be sustained.
- Water quality and environmental resources should be protected.
- Communities in which these resources are found should be preserved and defended against destructive physical and social forces.

Ideally, prudent and precise and practical regulations are necessary to protect resources deemed critical for the public good. By this statement, prudent means that the regulation has not only considered the regulation's benefits to the resources being protected, but it also has considered the unintended consequences and potential injuries to the regulated communities, the public, and the resources it is intended to safeguard. Therefore, proper regulation should not be hasty. Considerations should be broad enough that unforeseen consequences may be anticipated and avoided. Precise means that the regulation is narrow enough to achieve the regulation's goals – and no more. Practical means that it should be feasible and achievable within the realm of the practices that are known to be effective. And if it is anticipated that new technologies will bring about practical solutions, then the regulation should be phased in such a way to promote new technologies and continuous improvement. Additionally, regulation should be based on a critically analyzed, complete and objective data set. And the public servants who promulgate these regulations should be neutral and knowledgeable about the matter being regulated. The process by which the regulation is crafted and adopted should be fair with balanced input from interested parties.

Unfortunately, the Central Coast Ag Waiver and the processes by which it has been crafted have been far

from ideal. This regulation does not accomplish *any of the ideals* above. Additionally, there have been extensive complaints by multiple parties about the improper the process by which the Ag Waiver has been developed. Indeed, concerns were so pronounced that Congressman Sam Farr wrote a letter chastising RWQCB Staff on their inability to work with the agricultural community towards the goal of protecting water quality.

Alas, while the Agricultural community appreciates many of the changes made to this Order by SWRCB, there is strong disappointment that SWRCB did not go far enough and allowed this overwhelming, over-taxing, and unfocused regulation to proceed without extensive modification.

At this point, comments are narrowly limited to a few technical and legal issues. Please find my comments below. SWRCB provisions are in red and my comments regarding that provision follow in black.

Page 4:

"*If, following release of the Expert Panel's findings, we determine that additional revisions to the Agricultural Order are warranted, we will provide appropriate direction at that time."*

There is strong apprehension that the Expert Panel (that is yet to be appointed) will have a similar makeup as the SBX2 1 Interagency Task Force.

The Harter Nitrate Groundwater report may not be considered herein because the report release occurred after adoption of the Ag Waiver Order RB3-2012-0011. However, the appointment of the Interagency Task Force chosen to write the Harter report was convened in 2012. This panel was primarily comprised of resource agency staff and academics. Few had practical on-the-ground agricultural production experience, and with the exception of one or two University of California researchers, all were virtually ignorant of cool season vegetable production systems in the Salinas Valley. This lack of agricultural knowledge created serious flaws in the report writing process.

Our knowledge of the composition of the Interagency Task Force combined with the fact that much of the nitrate management components of this Ag Wavier are questionable, from an agronomic perspective, the formation of the "Expert Panel" begs the following questions:

- What is the makeup of this Expert Panel?
- Who will the Expert Panel members be?
- How much agricultural production experience will the Expert Panel members have?
- How much experience will the Expert Panel possess in regard to coastal strawberry and vegetable production systems?
- Will this Expert Panel perpetuate the precarious agronomic foundation upon which the Ag Waiver is based?

Page 12:

"In the new language describing third party monitoring and reporting programs, [SWRCB] state[s] that "aggregate monitoring and reporting must be on a scale sufficient to track progress in small sub-basins and be sufficiently representative of conditions in the sub-basins." The program proponents have flexibility to propose the appropriate scale for such sub-basins. We expect small sub -basins to be areal representations that are dictated by local conditions and constitute a reasonable unit for follow -up practice implementation for water quality improvement"

What does the preceding paragraph mean? Please clarify. As written, this provision is ripe for ever-evolving interpretation and manipulation over time.

Page 13:

"Depending on the scope of any proposed third party program, the Central Coast Water board may consider developing a separate order specific to the third party program."

SWRCB's direction to the Central Coast Regional Board to give fair consideration to proposed third party proposals is welcome as is the statement above that growers may pursue Ag Wavier relief through vetted and sound third party approaches.

Page 15:

"*The Executive Officer may waive the requirement for TAC review of a project or program if the Executive Officer determines that the specified representatives are unavailable for serving on a TAC. Third party projects or programs specifically allowed elsewhere in this Order are not subject to the requirements of Provision 11."*

It is interesting that rather than examine why the TAC (Technical Advisory Committee) provision in the AG Waiver failed to attract sufficient participants (in spite of two TAC member nomination periods), SWRCB simply chose to allow the Executive Officer to waive the requirement.

"An interested person may seek review by the Regional Board of the Executive Officer's approval or denial of a third party Tier change or alternative time project or program. As stated in the NPS Policy, management practice implementation is not a substitute for compliance with water quality requirements."

It is assumed that the intent of this provision is to provide a transparent Ag Waiver process. However, as written, this provision emboldens various stakeholder groups to target individual growers. This provision creates an opportunity to harass, intimidate, and demonize individual growers whereby they will be forced to incur larger operation and self-preservation expenses. This provision exceeds the "public interest" test and appears to cater to the demands of special interest groups.

Page 21

"Where review by the Central Coast Water Board of an Executive Officer decision is expressly provided in the Agricultural Order, we would expect that any person not satisfies with the Executive Officer's determination would see Central Coast Water Board review prior to filling a petition for review with the State Water Board."

Perhaps, a clause should be added to the statement above that reads "except in the event that waiting for review by the Central Coast Water Board hearing would result in a discharger missing the deadline for filing an appeal or petition with the State Water Board." It is conceivable that a grower may not be able to meet SWRCB filing deadlines if he must first go before the Central Coast Water Board as this Water Board does not meet on a monthly basis, and often, the timeframe for filing an appeal is 30 days.

Page 23

"Water Quality Standards Compliance Provisions 22 -23; Effective Control of Pollutant Discharges, provisions 82, 84-87."

The "standards" that have been developed by EPA, SWRCB and RWQCB have undergone some level of environmental analysis through basic empirical testing of impacts to beneficial uses. However, these standards have no precedence as Water Quality Objectives in a Non-Point Source Agricultural regulation of this magnitude. One would think that an unprecedented regulation of this scale would have been subjected to some sort of predictive analysis. Unfortunately, there has been no effort to evaluate the practical achievability of these regulatory water quality standards. Consequently, this regulation borders

on a very large social experiment that has extremely high stakes for both the environment and the Central Coast communities.

Page 24

"We will add a new provision to the Order to make explicit the Central Coast Water Board's intent that implementation of increasingly more effective management practices in an iterative manner constitutes compliance with Provisions 22 -23 and Provisions 84 -87 of the Agricultural Order.

This is appreciated. Unfortunately, what was intended to be a clarification is still very confusing and not easily reconciled with other statements about management practice implementation and compliance, which appear as follows:

- *"If the project is not effective in achieving water quality standards, additional management practices by individual Dischargers or the third party group will be necessary"*
- *"It is appropriate to attribute compliance where a discharger is engaged in a conscientious effort to implement appropriate controls". (Page 24)*
- *"To comply with…this Order, Dischargers must (1) implement management practices that prevent or reduce discharges of waste that are causing or contributing to exceedances of water quality standards; and (2) to the extent practices effectiveness evaluation or reporting, monitoring data, or inspections indicate that the implemented management practices have not been effective in preventing the discharges from causing or contributing to exceedances of water quality standards the Discharger must implement modified management practices. (Page 24 and 25)*
- *Although we have not revised every reference to compliance with water quality standards in the Agricultural Order, in all appropriate places, we interpret the requirement to "comply" with water quality standards to mean "not cause or contribute to exceedances of" water quality standards. (Footnote 65, Page 24)*

SWRCB is urged to further reconcile these statements, particularly the last bullet point, to reduce future misinterpretation.

Page 23

"According to the Central Coast Board, provisions 84-87 were intended to be read in the context of Provision 82, which states that the Central Coast Water Board will consider a wide set of factors in determining whether a Tier 3 discharger is effectively controlling the relevant pollutants. Those factors include effectiveness of management practice implementation, effectiveness of treatment or control measures, results of individual discharge monitoring and downstream surface water monitoring and information obtained from inspections."

This whole section (Pages 23 through 25) is predicated upon the assumptions that: 1) management practices have been assessed; 2) that there is a wide variety of practices available; and 3) that the relative and comparative effectiveness of practices are known.

The subject of management practices and the barriers to practice adoption and implementation were discussed in my March 9, 2011 letter to Chairman Jeffrey Young titled "The Conditional AG Waiver for Irrigated Lands and Management Practice Implementation". The information contained in this letter was the basis for a book chapter titled "The Challenges of Developing and Implementing Agricultural Environmental Management Practices" in the American Chemical Society's Symposium Series book, "Pesticide Mitigation Strategies for Surface Water Quality". This book was referenced during my March 14, 2012 testimony to Central Coast Regional Water Quality Control Board.

The March 9, 2011 letter addressed what management practice Central Coast growers are currently implementing, the barriers to developing and implementing practices and potential solutions for ramping up practice implementation. The letter also addresses an emerging body of work about the lag time between practice implementation and the point when improvements may be detected. In the letter, I pose a series of questions regarding why practices are not perceived to be more effective: 1) Are growers being asked the wrong question about what they are doing to protect the environment: are preconceptions shaping the question and the answers? 2) Are growers adopting the right practices? 3) If not, what are the right practices? 4) Are growers adopting the wrong practices? 5) If so, do the right management practices currently exist? Or do they need to be developed? 6) If the right practices exist, then, is information about practices and innovations resonating with growers to the point of adoption and implementation? 7) If the right practices do not exist, are effective systems in place to develop innovative and effective practices? 8) Is it possible that growers ARE adopting appropriate practices, but monitoring systems are not capable of measuring improvements? 9) Is it possible that existing monitoring programs are not sensitive enough to capture ecosystem-scale changes that take months/years/decades or longer to measure?

More recently, it has become evident that the relative effectiveness of most practices has not been quantified. This was confirmed through in discussions with National Resources Conservation Service (NRCS) Staff who readily admitted they do not quantify the effectiveness, the benefits or costs of practices. Rather, practices are recommended based upon qualitative criteria. If practices work in some places, they are assumed to work in other places. This is not always the case. For example, last decade on the Central Coast, the use of vegetated ditches was recommended to trap sediment, bacteria, and pesticide contamination and reduce loading to surface water. Vegetated ditches were known to be effective in the Midwest and Southern part of the United States. Unfortunately, after years of installing vegetated ditches, objective research was conducted on the Central Coast. It was found that vegetated ditches did not offer the same level of benefit as believed. Why was this? Because ditch construction on the Central Coast is a steep "v" shape rather than the broad, level ditches found in other parts of the country. Under Central Coast ditch design, sediment, bacteria and pesticides rarely come into contact with the vegetation and benefits are null. This example was presented in a letter to RWQCB dated XXXX This illustrates that a qualitative approach may lead to inappropriate (and some times, expensive) recommendations and undue regulatory pressures.

In respect to management practices, the Ag Order should 1) make it clear that conscientious effort to implement practices constitutes compliance; 2) remove references to the effectiveness unless such statements are qualified by acknowledgement of the ever-evolving nature of management practice development.

Page 25:

"*Dischargers who utilize containment structures (such as retention ponds or reservoirs) to achieve treatment or control of the discharge of wastes must manage, construct, or and maintain such containment structures to avoid percolation of waste to groundwater, minimize surface water overflows, and avoid degrading groundwater or surface water quality*."

In regard to percolation from containment basins, there is no data in the administrative record that substantiates Water Board claims that containment basins may cause groundwater contamination. Perhaps, there is a body of knowledge related to point-source wastewater treatment ponds or dairy lagoons. However, no citation was given on this point.

One would think that, in September 2012, when RWQCB Staff was questioned about the requirement to line basins, Staff would have provided justification for the requirement as a defense. However, in their October 31, 2012 Response to Petitions it is simply stated that NRCS provides information and assistance on standard industry practices to construct and maintain agricultural containment structures.

There are a wide variety of agricultural water containment structures: irrigation water reservoirs, tailwater recycling ponds, sediment basins, tailwater containment basins, and percolation ponds. RWQCB does not differentiate what types of basins may result in pollutant loading to groundwater or the varying degrees of percolation that may occur. For example, it is logical to assume that a percolation pond could be a source of groundwater contamination as it is designed specifically for that purpose. However, there is no consideration in the Ag Order that sediment accumulation in the bottom of a sediment pond becomes a physical barrier to percolation. Cursory research indicates other Regional Boards possess knowledge that sediment deposition rapidly and substantially reduces the usefulness of percolation ponds that are intended to recharge groundwater. Additionally, there are indications that denitrification occurs in the of bottom sediment ponds so that they actually become treatment practices rather than sources of contamination. Excavated sediment often demonstrates the physical characteristics of anoxic and denitrifying soils.

Perhaps, in light of the high expenses associated with agricultural water containment basin construction, retrofit, and/or lining, as evidenced during the September, 2012 Stay Hearing, the SWRCB Final Order could be modified to reflect that leaching risks vary substantially between types of containment structures and not all containment structures should be treated identically in the Tier 3 Surface Water Monitoring Program.

Further, perhaps, the Expert Panel could consider the efficacy of various containment basins as treatment structures and direct research funds towards better understanding when containment structures are nitrate treatments versus when they are sources of nitrate loading.

Page 26 – 27

"We also will not amend subsection d. The phrase "description of the typical volume of discharges and when the discharge is typically present" is sufficiently descriptive of the type of estimated, general information sought by the Central Coast Water Board under the provision. Similar information is required to be reported in Section E of the Annual Compliance Form (see Exhibit 1 attached hereto). To the extent there is any remaining confusion as to what should be recorded in the Farm Plan under subsection d, the information requested in the Annual Compliance Form may act as an example."

In all due respect, RWQCB Staff keeps insisting it must obtain information in order to meet its regulatory mandate but has not provided the regulated community with any indication of the process by which this data will be analyzed or how this information will be used for regulatory or enforcement purposes.

Page 28
"…Standard farming practices such as, but not limited to: visual inspections, photographs, soil nutrient testing, soil moisture measurements, and recordkeeping"

Please note, these are NOT farming practices but are assessments of management practices.

Page 30 and Page 32

*"However, we will make a revision to the cooperative groundwater monitoring provisions at Section A.6 of Part 2 of MRP Orders 1, 2, and 3. The revision clarifies that any cooperative groundwater monitoring program must require sampling of **all** domestic drinking water wells to the same extent these wells are required to be sampled under the individual"*

"In making this determination, we do not review or rely on any cooperative groundwater monitoring programs that have been proposed to or approved by the Central Coast Water Board to date. As stated previously in this Order, those programs post -date the Central Coast Water Board's adoption of the Agricultural Order and are outside the scope of these proceedings. We expect, however, that the Central

Coast Water Board will reevaluate any previously - approved cooperative groundwater monitoring programs to ensure that they are consistent with this Order."

SWRCB touts cooperative initiatives as having many advantages such as economies of scale and the benefits of collective action. However, amendments the SWRCB draft order imposes may make the Cooperative Groundwater Monitoring program being so expensive that no grower may be able to afford to participate. Tasking growers with the costs of sampling ALL monitoring wells two times when fewer samples could essentially characterize the groundwater likely will remove incentives to participate. Individual Monitoring Costs are $360-440.00 per well for sampling, analysis and uploading to Geotracker. This is likely to be a fraction of the cost of the proposed Cooperative Monitoring Program.

Page 32

"An interested person may seek review by the Regional Board of the Executive Officer's approval or denial of a cooperative groundwater monitoring program."

It is understood that the intent of this provision is to create a transparent and open process. However, this open-ended and unqualified permission for any interested party to challenge approval or denial of the Cooperative Groundwater Monitoring Program could lead to protracted negotiations that will further add expense to the program.

As stated earlier, this type of open involvement provides special interest groups with a mechanism by which to intimidate, harass and demonize the agricultural community.

"Dischargers electing to participate in a cooperative groundwater monitoring effort must convey this election to the Central Coast Water Board within 90 days of adoption of this Order, and the individual groundwater monitoring requirements shall not apply as long as a cooperative groundwater monitoring proposal for that Discharger's area is submitted within one (1) year of adoption of this Order. If not cooperative groundwater monitoring proposal for that Discharger's area is submitted within one (1) year, then the individual groundwater monitoring provisions shall apply and the Discharger shall have one (1) year to comply with the provisions identified in Part 2."

This provision creates confusion for all growers about making elections for Groundwater Monitoring options. Here are three different circumstances that are affected by the provision as written.

1) If a grower is in the area where a Cooperative Groundwater Monitoring Program has been approved, they must enroll with the program by September 9, 2013. Does this provision above give them the opportunity to change their enrollment within 90 days of the adoption of the SWRCB Final Order? I would assume they would have the option to re-evaluate their option in light of the Final Order.
2) If a grower is in an area where a Cooperative Groundwater Monitoring Program was proposed but not approved, does this provision offer that area an opportunity to renegotiate a new Cooperative Groundwater Monitoring Program?
3) If a grower selected Individual Groundwater Monitoring and is in an area where a Cooperative Groundwater Monitoring Program was proposed but not approved, will he have the opportunity to change his election to Cooperative Groundwater Monitoring in the hopes that a Cooperative Groundwater Monitoring Program might be negotiated?

"If a discharger conducting individual groundwater monitoring or a third party conducting cooperative groundwater monitoring determines that water in a well that is used or may be used for drinking water exceeds any Primary or Secondary MCL, the discharger or third party must notify the Regional Board and users of that water of the exceedances within 30 days. Where the exceedances is of 45 m /L of Nitrate as NO3 or 10m /L of Nitrate + Nitrite (as N), the discharger or third party must provide notice to users within

24 hours of learning of the exceedances and include the following information in the notice in both English and Spanish"

It is critical to notify as quickly as possible anyone drinking water exceeding 45 mg/l of nitrate (10 mg/l of nitrate+nitrite as N). However, a 24-hour notice requirement may not be feasible. Each property lease arrangement is different. There are endless permutations of permissions, notification requirements, and actions that must take place depending on the contractual agreements between the operator and landlord. Likewise, many pieces of property have subleases and or multiple leases. Additionally, there are a variety of drinking water consumers: landlords, landlords' relatives, employees and/or tenants of either the landlord or operator or sub lessee. The lines of communication do not always travel in a linear fashion. Lease arrangements and the relationship of the drinking water consumers to either the landlord or operator change the direction and nature of information flow. The ability to provide notice is further complicated if one party in the information loop is absent. More time for notification needs to be allowed. Perhaps, notification should be initiated within 24 hours and completed within a certain number of days?

Page 33

"We direct the Central Coast Water Board to work with the State Water Board to develop and make available English and Spanish language templates for notification consistent with new Section A.7 of Part 2 of the Tier 1, 2, and 3 MRPs."

Please note that notification templates already have been developed by Monterey County Department of Public Health.

Page 34

"We will also make a revision to clarify that photo documentation must be maintained in the Farm Plan and needs to be submitted to the Executive Officer upon request. This revision makes Provision 69 consistent with revision made by the Central Coast Water Board Executive Officer to the Tier 2 and Tier 3 MRPs subsequent to adoption of the Ag Order."

This compliance requirement should have been stayed in September 2012. The Tier 3 Surface Water Monitoring Program is another example of a deadline that should have been stayed is the March 15, 2013 deadline for SAP/QAPP submissions. Ill-advisedly, growers who have conscientiously complied with now defunct deadlines are incurring thousands of dollars in needless expenses because these items were not properly stayed. Further, growers who complied are being penalized by incurring extra expenses while their neighbors, who did not worry about deadlines, do not incur these expenses. The message that is being conveyed is that it does not pay to promptly comply with deadline requirements.

Page 37

"…to clarify that such structures should be monitored only if the water is not being reused for irrigation.92 The water in some containment structures is generally re- applied to the fields, and there is no significant benefit to characterizing the quality of that water unless it will reach surface waters or is retained in the structure to percolate to groundwater".

Because of food safety, containment water CANNOT be reused for irrigation directly on fresh fruits and vegetables. It may be used to water roads, irrigate cover crops, or to irrigate newly established riparian habitat, vegetated buffers or waterways.

"Cost information submitted in the stay proceedings primarily addressed costs associated with preparation of the sampling and analysis plans and the quality assurance project plans for individual surface water discharge monitoring. We found then that the cost estimates submitted by dischargers were

inflated and declined to stay preparation of the relevant plans. (Stay Order, pp. 23 -24.) Those plans were due by March 15, 2013. The Stay Request submitted by Grower- Shipper included a declaration asserting that a grower with five to ten sampling locations would incur costs ranging from $7000 to $11,000 per sampling event. (Grower- Shipper Request for Stay, Suverkropp Decl.[Apr. 12, 20121, If 8.) The Central Coast Water Board has estimated the cost of sampling and laboratory analysis to be in the range of $5,000 for one tailwater discharge point, one stormwater discharge point, and three sampling events. (Central Coast Water Board Response to the Petitions, p. 33; AR File No. 234, p.34)"

The paragraph above is not factual. According to the written testimony provided by RWQCB Staff to SWRCB as part of the September 2012 Stay Hearing, cost estimates are $6,3401 – 8,551 per farm, depending on the size and complexity of the individual farm. Staff stated *"It is possible for the Costs to exceed the range above if numerous additional sampling point are necessary…The total estimated cost is comprised of preparing a SAP and QAPP, plus the cost of initiating monitoring. The cost of preparing a QAPP is estimated to be $750 – 3,000. This range assumes a ready-to-use template will be provided by the Central Coast Water Board in advance of the October 1, 2013 compliance date, which may minimize the need to hire consulting services. Grower will fill in site-specific information such as locations and numbers of sites to be sampled. Central Coast Water Board staff with expertise in designing and implementing monitoring programs (Karen Worcester, personal communication August 14, 2012) estimates the time to fill in a template will be from 5-20 hours and the approximate cost to be $150 per hour for a qualified professional. The costs to initiate monitoring are estimated to cost $5,551. The main costs are due to the type of laboratory analysis and the number of samples required by the MRP. The $55512 amount assumes one tailwater discharge point, one stormwater discharge point, 3 sampling events: 1 without pesticide/toxicity, 2 with pesticide/toxicity."*

Here is the reality check:

1) The deadline for Tier 3 growers to submit a SAP/QAPP draft for RWQCB grower review was March 15, 2013. Agriculture started requesting a copy of the template as early as the summer of 2012. On January 7, 2013, I inquired of Central Coast Water Quality Preservation, Inc. (Sarah Greene, personal communication) if they would be providing a template. I was told that RWQCB was working on a template and it would be available by the end of the week. RWQCB Staff did not release the SAP/QAPP template until mid February 2013. There were many questions associated with the template and not enough time to have those questions answered in order to meet the March 15, 2013 deadline. Agriculture requested an extension of the SAP/QAPP submittal deadline the March 14-15. 2013 Water Board hearing. The Board did not approve that deadline, but agreed they would not enforce upon growers who did not meet it. Growers who were concerned about meeting the March 15, 2013 SAP/QAPP submittal deadline did not use the RWQCB template.

2) RWQCB and SWRCB cost estimates for writing and obtaining approval of the SAP/QAPP are grossly underestimated. In spite of RWQCB assurances that growers would be able to complete the template without assistance, most growers are not knowledgeable enough with laboratory and sampling QA/QC requirements to write the SAP/QAPP on their own. At the March 14-15, 2013 RWQCB Water Board hearing, Norm Groot, Monterey Farm Bureau testified that it took an average of 20 hours for a qualified professional to complete the SAP/QAPP but proposed time estimates by professional consultants are much higher, and hence, proposed costs range between $15,000 - $20,000 per ranch. This is without SWRCB modifications to the Tier 3 surface water monitoring requirements, which will induce additional costs for future modifications and resubmittal to RWQCB.

3) RWQCB and SWRCB cost estimates for sampling and analysis are grossly underestimated. One grower has allowed me to use his operation as an example. He has 2 ranches that exceed 500 acres and therefore are both categorized as Tier 3 ranches. Both should require the maximum number of sampling events or 6 events per year. One ranch has a number of containment

structures that virtually eliminate discharge during the irrigation season and thus he will likely only have 2 events during the rainy season. Sampling and Analysis costs could be much higher than the estimates below.

Analytical Costs				
	Parameters	**Total Number of samples/event (includes QC)**	**Cost/sample**	**Total Cost**
Surface Water Discharge (Quotes from 4 labs)	Flow/volume, duration of flow, temperature, pH, ED, Turbidity, Nitrate + Nitrite (as N), and Ammonia	48	$170.00 - $300.00	$8,160 - $14,400
Surface Water Discharge	Chlorpyrifos/Diazinon (these products are not being applied)	0	0	$0
Surface Water Discharge	Ceriodaphnia and Hyallela toxicity	41	$1100.00 - $1500.00	$45,100 - $61,500
Tailwater Ponds or Other Surface Containment Structures	Volume of pond and Nitrate + Nitrate (as N)	36	$60-70	$2,160 - $2,520
Reporting		20	$100-130	$2,000 - $2,600
Total				**$57,420 - $81,020**

4) Furthermore, RWQCB and SWRCB staff and Water Boards have been advised repeatedly that there are not sufficient technical professionals available on the Central Coast to implement the adopted waiver. Technical capacity insufficiencies will apply to the SWRCB Final Order as well.

On March 9, 2011, I provided the following comments to RWQCB in regard to the Draft Order. *"Since the 2008 economic downturn, technical capacity [on the Central Coast] has declined. There are fewer experienced technical service providers available to assist growers…. Many persons involved with agriculture turn to the NRCS as a means to provide growers with management practice assistance. On the Central Coast, the many growers often do not qualify for USDA programs because the size of their farm exceeds national gross revenue thresholds. Bear in mind, this is not net revenue and does not indicate profit. Eligibility is an important point relative to the proposed Ag Waiver. Tier 3 growers have rigorous compliance requirements. Size is one criterion that can lead to a grower being categorized as Tier 3. Growers more than 1000 acres are targeted to implement practices. Yet, these are the very growers who are NOT eligible for government assistance.*

Large growers are not the only growers who are ineligible for assistance. Growers of lucrative crops, such as strawberries might be ineligible with as few as 10 acres. According to NRCS, despite the ineligibility issue, demand for NRCS technical assistance still outstrips NRCS resources and the abilities of existing staff to assist growers on the Central Coast.

Program	2008		2009		2010	
	Applications	Contracts	Applications	Contracts	Applications	Contracts
EQIP	85	50	179	85	140	66
WHIP	14	9	6	3	0	0
AWEP	0	0	38	29	50	42
CSP	37	34	0	0	36	24
***Numbers are approximations based upon personal communication with Daniel Mountjoy, Area Resource Conservationist.**						

One would think this would create opportunities for the private sector to provide relief in terms of technical services. Before relying on private industry, three points should be emphasized: 1) there is currently an expected shortage of both licensed and experienced professionals because of aging workforce (Cline, 2006). For example, of the 3,100 California licensed Pest Control Advisors, almost 40 percent are over 55. Thirty-five percent are 45 to 55. Only 17 percent are 44 or younger. Many are retiring and there are few replacement candidates graduating from current college programs. 2) Time will be required for private consultants to acquire necessary certificates or experience levels to fill market niches created by new regulations and 3) Small farms and minority growers may not have equal access to private technical assistance."

This lack of technical professionals is demonstrated by insufficiency of sampling crews on the Central Coast. The Tier 3 grower example I used above was forced to find sampling crews from outside of the region. I spent the summer trying to remedy this situation. For example, I spent the summer trying to hire local sampling crews for all aspects of on-farm sampling and monitoring such as: Tier 3 surface water monitoring, irrigation and drinking water well monitoring as per the individual groundwater monitoring requirements, routine irrigation water monitoring, depth to groundwater determinations, irrigation and stormwater surface water flow measurements, and sediment measurements of pre- and post-PAM treatment. I explored the use of college interns and/or college grad students. I tried to hire a number of graduating college students. I tried to put together a consortium of independent consultants to share the costs of a sampling crew. At this point in time, a local agronomist has tentatively agreed to do all sampling for *one* of my clients. This agreement is contingent upon his comfort level that his staff can meet MRP, SAP, and QAPP requirements in the Tier 3 Surface Water Monitoring program. I have not found samplers for my other clients, at this time.

Quite candidly SWRCB's treatment of the cost estimates as presented by agriculture and the acceptance of cost estimates provided by RWQCB is insulting. This displays such a predisposition to discount Agriculture's testimony that it calls to question the seriousness with which SWRCB has considered all aspects of this petition process. Your findings that discharger costs were inflated are simply wrong.

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Tier 3 Dischargers must select monitoring points to characterize at least 80% of the estimated maximum irrigation run-off discharge volume from each farm /ranch based on that farm's /ranch's typical discharge patterns

I have no idea how to advise my clients how to comply with this requirement as it is written.

If multiple ponds are present, sampling must cover at least those structures that would account for 80% of the maximum storage volume of the containment features, regardless of their current stored volume.

I have no idea how to advise my clients how to comply with this requirement as it is written. I don't know what "80% of the maximum storage volume of the containment features" means. Does this include the containment basins that are used to irrigate cover crops? I don't really understand the meaning of

“containment basin”. I assume that it includes any basin located on a farm that contains water. Does it also include irrigation reservoirs typically are pumped directly from groundwater and used prior to fertilizer inputs?

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The requirement to select monitoring points to characterize at least 80% of the estimated maximum irrigation run-off based on typical discharge patterns is for the purposes of attempting to collect samples that represent a majority of the volume of irrigation run-off discharged; however, the Board recognizes that predetermining these locations is not always possible and that sampling results may vary. The MRP does not specify the number or location of monitoring points to provide maximum flexibility for growers to determine how many sites are necessary and exact locations given the anticipated site -specific conditions.

However, the SAP and QAPP *DO* specify the sampling points and MUST be approved before sampling may begin. There is no flexibility once the SAP/QAPP is approved.

Page 43

“Our revisions also require reporting to be done at the field level or at a management block level, as that term is defined in the revisions. See page 44 below.

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“In order to report on a field basis, then entire field must be planted with the same crop and receive the same fertilizer inputs. A management block is any portion of a discharger’s land that is planted with the same crop and receives the same fertilizer inputs. Management blocks may consist of multiple fields and/or division of a single field.

I am not sure that SWRCB is aware of what they are requiring when they require growers to provide fertilizer applied, soil nitrate concentrations and water concentrations on any portion of land “that is planted with the same crop and receives the same fertilizer inputs”.

One of the principal differences between coastal agriculture production systems and other production systems are that field sizes are smaller. The average field size is about 13 acres or less. Another difference is those fields are subdivided yet one more time down to a “planting” level. On the Central Coast, the smallest single crop unit is a “planting”. A grower has to drill down to the planting level in order to satisfy this requirement.

Plantings are often a fraction of an acre to a few acres. The purpose of this miniscule division is to take advantage of the variable growing conditions on the Central Coast in order to meet diverse end-products/contract deliverables/SKUs (e.g. head lettuce of a certain size, romaine hearts, broccoli for oriental export, baby greens, organic produce, single leaf lettuce, chopped lettuce, bagged lettuce, etc.) Diversity is achieved when a specific crop variety intended is planted on specific soil type along a specific climatic gradient that possesses unique fertility and irrigation requirements. Management of this diversity is not incidental. It is intentional. Consequently, while a planting fits the definition of a “management unit”, as described above, the grower would ultimately have thousands of permutations of crop/variety/soil type/climatic gradient/fertilizer/irrigation water to report to RWQCB. The concern is the usefulness and meaningfulness of these data, when received. Will RWQCB be able to discern anything about the grower’s adoption of appropriate practices when this level of detail is reported?

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"We will strike the requirements in the Agricultural Order to include calculations of the balance ratio of Nitrogen applied to Nitrogen uptake, the estimation of annual loading of Nitrogen to groundwater and surface water, and the annual reduction in nitrogen loading to groundwater, as well as the requirement to report this information to the Central Coast Water Board.

Striking these requirements is an improvement as is evidenced by the presentation and comment letters provide by Dr. John Letey, PhD. Professor Emeritus, University of California, Riverside, who was instrumental in the development of the Nitrate Hazard Index and was an expert on the movement of nitrate in the soil.

He gave testimony on March 17, 2011 regarding the correlation of nitrate concentration and nitrate load, *"…nitrate concentration in the soil below the root zone is not correlated to the load of nitrate. Nor is it correlated to the quality of the fertilizer-irrigation management. Nitrate concentration is not synonymous with the nitrate load. Nitrate load refers to the quantity of nitrates moving below the root zone in a given time. Nitrate load is equal to a combination of nitrate concentration and water flow.*

He commented about Nitrogen Balance Ratios in August 2011, stating, *"a simple [balance ratio] concept ignores many complex dynamic factors in a nitrogen balance in an agricultural field. For example, organic N is neither available for the plant uptake nor leaching until it is mineralized. Addition of organic N is an input, but has no immediate impact would be misleading in a balance computation. Therefore, the quantitative input of the N critical to the analyses follows a time dependent path that is impacted by the nature of the organic N, temperature, and soil water content. Furthermore, more, the leaching potential is dependent on the chemical form of N. The nitrate form is vey mobile and the ammonium form is not very mobile. I could not find any reference to denitrification in the Order. Denitrification represents an output. The rate of denitrification is affected by soil type, water amount, energy source, temperature, etc. Much research [that] was done related to denitrification by my colleagues and I. This included measurement of a farmer's field where the denitrification was about 15% of the N application. This was on a field that would not represent a soil system where on e would expect the highest rates of denitrification. This is an example of the great deficiency in the [Order] that tends to ignore the impact of soil type.*

"I have been involved with experiments on field plots where measurement of a nitrogen balance was desired. Even with the most sophisticated instrumentation and extensive sampling a good balance is not achieved. There simply are too many pools of nitrogen and transformations of nitrogen to achieve an accurate balance. Quantifying the amount of denitrification is particularly a [difficult] problem.

In August 2011 comments he stated *"The only more challenging thing to measure other than the nitrogen balance is the nitrogen load discharged from the root zone…Whereas the concentration can readily be measured, the rate of water flow is virtually impossible to measure. This factor is usually estimate by doing a water balance between water application and evapotranspiration (ET). Often overlooked in doing this balance is the fact that ER is a function of crop growth as well as climatic conditions. I will amplify on this matter more when I explain the feedback mechanism between the plant and soil. I repeat that concentration and load are neither synonymous nor proportional. Most often they are inversely related.* [bold font is his emphasis] ***"Measurement of load is virtually impossible in the field."***

"Clearly, factors related to a nitrogen must be, and will e, considered in developing a Management Plan. Furthermore, the goal will be to minimize the nitrate load discharged from the root system. The [Order] will be designed with these factors in mind. The mandates to provide numerical values for these factors that cannot be accurately quantified are more destructive than they are helpful. The mandate to achieve a prescribed nitrogen balance that is not properly defined is really bad. Different N balances, as defined in the Order, are justified for different soils and other factors. A soil with a high denitrification potential will require application of a higher ration of N input to N uptake by the plant than a soil with low denitrification potential. [bold font is his emphasis] ***Trust the certified professional to do his or her job. They are better prepared to develop a good plan than meeting the mandates from those who have not***

demonstrated…that they understand the complexity of the system they propose to regulate.

"[There] is a very important consideration in developing regulations concerning N application. It is not widely understood so I am not surprised that it has not been considered in the [Order]. The typical expectation is that the amount of N leached can be decreased by applying less N. This is true if excessive N above that to achieve high yield has been applied. However, if only adequate N has been applied to achieve high yield, a further reduction in N application can lead to higher quantities of N to be leached and not less. How can this be? Or is associated with a negative feed-back process. The crop ET is generally linearly related to the amount of plant dry matter production. Therefore, if a management factor leads to reduced plant size, it also leads to reduced ET…[bold font is his emphasis] ***The bottom line is that high crop yields are compatible with low groundwater degradation goals if properly designed and managed. Higher crop yields remove more N and water that reduces the flow of water and N below the root zone, than low crops yields.***

"There are some major shortcomings in the scientific and economic content of the [2010] Draft Order that must be fixed if the expected goals are to be achieved. "Humans can write anything into law and regulations. However, if some of the components are not consistent with basic physical-chemical-biological laws, the expected results will not be achieved."

"We will retain the requirement to determine crop nitrogen uptake values as part of preparation of the INMP, as this information is important to both the discharger and the professional certifying the INMP in determining the appropriate amount of nitrogen to be applied at the farm, but we will strike the requirement to have that information reported."

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SWRCB states "crop nitrogen uptake values are not widely available and will require crop substitution, making accuracy of the balance ratio questionable."

If SWRCB admits that uptake values are not widely available and that any attempt to use substitutions would create accuracy issues, then, why would a determination of crop nitrogen uptake values be required as part of the preparation of the Irrigation Nutrient Management Plan.

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"The professional certification of the INMP must indicate that the relevant expert has reviewed all necessary documentation and testing results, evaluated total nitrogen applied relative to typical crop nitrogen uptake and nitrogen removed at harvest and conducted field verification to ensure accuracy of reporting.

Under the circumstances that "crop nitrogen uptake values are not widely available", how could a professional, of any integrity, certify the validity of the Irrigation Nutrient Management Plan? Further, if crop uptake values are not widely available, one must assume that nitrogen removed at harvest is not readily available and verification may beyond the scope of the independent professional.

f. Dischargers must meet the requirement to record total nitrogen in the soil in 4.e.iii. Dischargers may take a nitrogen soil sample (e.g. laboratory analysis or nitrate quick test) or use an alternative method to

As per comments by Drs. Letey and Hartz, there is substantial uncertainty as to the real meaning of use of this information considering the variability of soil denitrification and nitrification rates which are predicated by weather, rainfall, soil organic matter, preceding crop residue, and the ability of the previous crop and crop being grown to scavenge N below the root zone. Further, I question whether RWQCB has sufficient qualified staff to interpret the massive amount of data that will be reported if this applied to all

Tier 2 and 3 growers who have a high nitrate hazard index.

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"Further, we have retained all monitoring necessary to detect and track any degradation in surface water and groundwater, and, as a result, the Central Coast Water board can require more stringent management practices where it determines that degradation is in act occurring.

Please see comments above regarding the availability and relative effectiveness of management practices.

In closing, On July 8, 2010, Dr. Tim Hartz, UCD, further addressed technical hurdles to address water quality problems. He stated that there are certain soil solution nitrate concentrations that are necessary to produce cool season vegetable crops such as lettuce. For example, lettuce requires a soil water nitrate concentration of 50 ppm. Yield reductions and/or chlorosis are seen when soil solution is below this concentration. He also discussed the dangers of increasing soil salinity when water is retained in the root zone. Many crops such as lettuce and strawberries are very sensitive to salt buildup and yield reductions occur. In summary, Tim stated, *"Growers can reduce nitrate loading through irrigation and fertilizer management [but] using a nitrate concentration as the sole focus of monitoring may undervalue agronomic improvements."*

Tim raises an important question. Will this Ag Waiver destroy the beneficial use of agricultural water in soil solutions by reducing nitrate concentrations below levels that can support crops that are ideally suited for these growing conditions? And will the Ag Waiver further degrade agriculture water in soil solutions by increasing salinity and sodicity levels to the point that these crops may not be grown in this area.

Under CEQA, agricultural water and soil are beneficial uses that have should be given equal protections as any other natural resources.

On April 10, 2010, as the Executive Director of the Central Coast Agricultural Water Quality Coalition, I commented that the Ag Order seemed to weigh other beneficial uses as more important than agricultural use. *"The Coalition is concerned that emphasis placed on protection of aquatic species has created a "weighting" of beneficial uses such that other beneficial uses are considered more important than agriculture. Such an approach is not supported by the intent of legislation created Porter Cologne. The act was intended to equally consider ALL demands being made and to be made on waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible."*

The question becomes how to create a regulation that will protect all beneficial uses through the use of prudent milestones, and the promotion of agronomically sound management practices that are simultaneously protective of environmental resources. This will be a very difficult goal to realize.

The use of an appropriate appointed Expert Panel who is capable of non-partisan, neutral, science-based deliberations that give equal weight to the art of farming will likely be critical to moving forward.

In the end, I must reiterate that this Order as written is too complex, on one hand, and yet, on the other hand, is ignorant of the complexities of coastal farming systems. Nevertheless, while I strongly object to the process by which this regulation has evolved and am concerned about the unintended consequences to communities on the Central Coast, I will continue to assist growers to comply with this regulation and the goals outlined in the beginning of this letter.

Thank you for consideration of my comments.

Most Sincerely,

Kay Mercer
President.