

**Central Coast Water Quality Preservation, Inc.**

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May 6, 2008

Mr. Jeffrey S. Young  
Chair  
Central Coast Regional Water Quality Control Board  
895 Aerovista Place, Suite 101  
San Luis Obispo, CA 93401

Re: Toxicity – Staff Report  
Board Meeting, May 9, 2008  
Item #22

Dear Chairman Young:

The Central Coast Regional Water Quality Control Board, through its CCAMP program, has monitored water quality throughout the central coast for many years. The results show that ambient water quality ranges from pristine to significantly impaired. Repeated sampling shows water quality impairment at many locations, in urban, rural and agricultural areas, which have been listed as §303(d) sites. Aquatic toxicity is one of the indicators of impairment. Through implementation of the Cooperative Monitoring Program (CMP), as part of the Ag Waiver, in 2005, more monitoring, and thus more information, is available for agricultural than for non-agricultural areas within the region.

**Agricultural Water Quality:** In 2004, 23 agricultural organizations from throughout the central coast supported the adoption of the Ag Waiver. It required irrigated farmers to enroll, attend classes, develop a management plan and implement practices, all designed to improve water quality. It also mandated the Cooperative Monitoring Program, managed by Central Coast Water Quality Preservation, Inc. (CCWQP). All 50 sites monitored by the CMP were previously listed as §303(d) impaired waterbodies. No CMP sites were unimpaired. Predictably, data from three years of monitoring shows that some of these sites have repeated toxicity. Yet these sites represent only a portion of the 400,000 acres of irrigated agriculture on the central coast.

The staff report on toxicity focuses on selected areas of irrigated agriculture with high summer irrigation tailwater flows. However, not all irrigated agriculture has irrigation tailwater. Furthermore, as the staff report shows, some areas, like the Blanco, with irrigation tailwater, do not experience recurring toxicity.

In 2006 a problem with e.coli on spinach caused significant changes in farm management practices designed to improve food safety. The staff report points out that this has resulted in the removal of water quality management practices previously implemented by farmers, particularly

vegetative treatment and erosion control measures. This resulted in a setback in obtaining the mutually desired goal of water quality improvement. Unfortunately, farmers, particularly growers for the leafy greens market, are confronted by inconsistent and conflicting mandates regarding food safety and water quality improvement. This has caused many farmers to seek out new practices, like increased drip irrigation, which are consistent with both objectives. Not all growers have either the economic or educational basis to promptly change their methods of farming to meet both objectives. The staff report shows that vegetable farmers, those with the greatest burden of food safety requirements, have started to pursue new or extended implementation of systems to improve water quality now that the food safety requirements seem to be better known and the area of overlap for food safety and improved water quality is understood, and therefore perceived to be achievable.

**Urban Data:** There is relatively less research of urban runoff than in agricultural areas, primarily due to the timing of regulatory mandates. Until recently only the City of Salinas was required to monitor stormwater. As other cities are brought up to MS4 standards, and commence regularly scheduled water monitoring, more information about urban generated water impacts will become available. However, prior research indicates that urban toxicity in many cases may exceed the contribution from agriculture. More monitoring in urban areas is necessary to better understand its contribution, particularly in light of the recent rapid expansion of development in the region.

**Improvements Implemented by Farmers through the Ag Waiver:** Food safety concerns and development of new or revised techniques to improve water quality require that irrigated farmers learn new methods which are mutually compatible. Growers on the central coast now have between two and three years of CMP water quality data available from CCWQP so that they can understand the water quality within the watershed(s) where they farm. This information, and the Ag Waiver requirement for follow-up monitoring and outreach, has resulted in the development of a three pronged approach to help farmers in some of the more impacted areas improve water quality.

A comprehensive program to learn more about water quality patterns, usage and consequences in six key watersheds in the central coast was started this year. These watersheds, Orcutt-Solomon Creek in Santa Barbara County, Oso Flaco Creek in San Luis Obispo County, Quail and Chualar Creeks in Monterey County, San Juan Creek in San Benito County and Llagas Creek in Santa Clara County, already the location of an existing CMP monitoring site, will now have a suite of additional monitoring and practical training for area farmers.

**Upstream Monitoring:** At each of the six watersheds CCWQP will establish 3 or 4 upstream sites, a total of 20 locations, to monitor water on a temporary basis for one year. We will also sample at 12 other sites to improve our knowledge of water quality, or to sample water in areas not previously part of the CMP, for 32 total sites. Each location will be sampled monthly using the same procedures as the existing 50 permanent CMP sites. We will also conduct four tests for toxicity, based on known downstream results from prior years. This will meet the Ag Waiver obligations for follow-up and provide local farmers with better information on the sources of pollution.

**Continuous Flow Monitoring:** This is an innovative project to measure water flows, discharge, every 15 minutes for 6 months at, or near, the CMP site in the six watersheds. We presently sample flows one time each month, giving us a snapshot of water in each creek. No one knows if this is representative of water flows through the course of the day. Most likely it is not. After all how much irrigation is going on at 2 a.m.? On the other hand it is bad math to take a monthly sample at 2 p.m. and assume it is like that 24 hours a day, every day.

**Outreach and Practical Training:** CCWQP is organizing watershed specific outreach and practical education in the six watersheds. Each session will use the new upstream and flow monitoring to give a clear view to farmers of the water quality and quantity issues in their drainage. This will be combined with discussions by our outreach partners, who will have specific knowledge of the area and crops. These partners from Farm Bureaus, Ag Coalitions, UC Davis, NRCS, UCCE, RCD, etc., will be able to make farm specific suggestions on how growers can improve the quality of the irrigation water running off of their fields.

**Improved Water Quality not Mandated Review of Cropping Systems:** The staff report understands that improved irrigation practices could reduce or eliminate tailwater, which would have a corresponding reduction in aquatic toxicity (Report pg. 14). This gets to the heart of the issue, that there are actions which farmers can take, like better control of irrigation induced runoff, which will improve water quality in a "relatively short time." The agricultural partners who work with CCWQP to advise famers on irrigation and chemical management practices believe that there are other solutions which may produce improvements in water quality, if designed for specific topography and soil types on individual farms.

Unfortunately the report suggests that "cropping systems" or the variety of crops grown should come under review. The report goes so far as to identify broccoli, cole crops and lettuce as "problematic" (page 15). While problematic is not defined in the context used, the commonly accepted definition, "open to debate or questionable", would seem to indicate that several key crops grown by local farmers are subject to review without regard to any relationship between widely diverse locations where the crops are cultivated and harvested, and water quality. Cole crops include broccoli, cabbage, cauliflower, brussels sprout, and several less common, but locally grown cole crops like, collards, kale, kohlrabi, mustard, turnips, broccoli rabe and watercress. Cole crops grow well along the central coast due to the mild summer temperatures. Lettuce is by far the biggest crop on the area. These crops are grown by farmers throughout the region, in areas noted by staff in the report and in areas without any summer irrigation runoff. Banishing these crops by use of a broad brush implication that they are directly related to water quality degradation is unwarranted and without substantiation. It also fails to consider the dominance these crops have not only to the area, but to consumers throughout the United States. As the chart shows (and is more fully illustrated in Attachment A to

2006	% of National Harvest	Total	
		Acres	Value
Broccoli	66%	92,199	\$ 446,629,188
Brussels Sprouts	65%	1,250	\$ 8,327,000
Cabbage		8,493	\$ 47,238,376
Cauliflower	64%	28,701	\$ 144,293,108
Lettuce, Head	67%	89,446	\$ 556,661,045
Lettuce, Leaf		124,099	\$ 730,680,912
Lettuce Total		213,545	\$ 1,287,341,957
<b>Total for Region</b>		<b>344,188</b>	<b>\$ 1,933,829,629</b>

this letter) a vast majority of the lettuce, broccoli, cauliflower and brussels sprouts consumed nationally are grown by central coast farmers, with an annual farm gate value exceeding \$1.9 billion dollars.

It is better to have farmers improve the water which flows off their farms, to continue to be responsible for good farm management practices, than for non-farmers to pick and choose crops which are perceived to be appropriate for cultivation.

It is difficult to understand how years of research by the University of California, State Colleges, local universities and other land grant schools dedicated to irrigation and fertilizer management has resulted in a "lack of good crop-specific information". Lettuce, broccoli, cabbage, cauliflower, and many other vegetable crops have a plethora of current research which indicates how they can be efficiently grown with sensitivity to water, fertilizer and chemical management. It may be more correct to assume that not all of the farmers in a particular area have access to this information, than to believe that it does not exist. Indeed, one of the principal tenets of the Ag Waiver is that growers attend classes to learn of the management practices best suited for their location, soil and crop. Staff even comments that farmers have improved irrigation management in response to the challenges posed by the Ag Waiver, and encouragement by CCRWQCB on farm inspections.

Water quality in agriculture areas, even three years after implementation of the Ag Waiver by CCRWQCB, still ranges from good to impaired. Farmers in areas with impaired water quality now have the information about what is contributing to degradation through the CMP, and the outreach by CCWQP and the other agricultural associations throughout the central coast. Practices, which are consistent with both improved water quality and food safety mandates, are being implemented. Time is necessary for central coast farmers to complete this process.

Should you, members of your board or staff, have any questions regarding the toxicity in agricultural areas, or the above, please contact me. Thank you.

Sincerely  
Central Coast Water Quality Preservation, Inc.



Kirk F. Schmidt  
Executive Director

encl.: Central Coast 2006 Crops (Attachment A)

cc: Roger Briggs  
Alison Jones

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Central Coast Crop Reports  
2006 by County

Attachment A

2006	Santa Clara		San Benito		Santa Cruz		Monterey	
	Acres	Value	Acres	Value	Acres	Value	Acres	Value
Broccoli	967	\$ 3,864,000	572	\$ 2,980,000	382	\$ 3,401,000	49,119	\$ 234,400,000
Brussels Sprouts					1,250	\$ 8,327,000	*	
Cabbage	206	\$ 1,141,000	706	\$ 3,893,000			5,234	\$ 27,640,000
Cauliflower							17,524	\$ 95,059,000
Lettuce, Head			2,339	\$ 8,881,000	1,908	\$ 7,657,000	66,007	\$ 443,920,000
Lettuce, Leaf	3,452	\$ 8,835,000	8,972	\$ 40,431,000	2,237	\$ 11,588,000	103,256	\$ 630,370,000
Lettuce Total	3,452	\$ 8,835,000	11,311	\$ 49,312,000	4,145	\$ 19,245,000	169,263	\$ 1,074,290,000
<b>Total by County</b>	<b>4,625</b>	<b>\$ 13,840,000</b>	<b>12,589</b>	<b>\$ 56,185,000</b>	<b>5,777</b>	<b>\$ 30,973,000</b>	<b>241,140</b>	<b>\$ 1,431,389,000</b>

2006	San Luis Obispo		Santa Barbara		2006	% of National Harvest	Total	
	Acres	Value	Acres	Value			Acres	Value
Broccoli	12,909	\$ 73,111,000	28,250	\$ 128,873,188	Broccoli	66%	92,199	\$ 446,629,188
Brussels Sprouts					Brussels Sprouts	65% *	1,250	\$ 8,327,000
Cabbage	1,278	\$ 7,824,000	1,069	\$ 6,740,376	Cabbage		8,493	\$ 47,238,376
Cauliflower	2,556	\$ 11,819,000	8,621	\$ 37,415,108	Cauliflower	64%	28,701	\$ 144,293,108
Lettuce, Head	6,171	\$ 29,253,000	13,021	\$ 66,950,045	Lettuce, Head	67%	89,446	\$ 556,661,045
Lettuce, Leaf	2,079	\$ 12,605,000	4,103	\$ 26,851,912	Lettuce, Leaf		124,099	\$ 730,680,912
Lettuce Total	8,250	\$ 41,858,000	17,124	\$ 93,801,957	Lettuce Total		213,545	\$ 1,287,341,957
<b>Total by County</b>	<b>24,993</b>	<b>\$ 134,612,000</b>	<b>55,064</b>	<b>\$ 266,830,629</b>	<b>Total for Region</b>		<b>344,188</b>	<b>\$ 1,933,829,629</b>

Crop acres and values obtained from each county annual Agricultural Commissioner's Crop Report for 2006

National harvest percentage compiled from county reports, USDA, CDFA and CFBF

\* brussels sprout harvest National % is estimated as statistics do not include Monterey County (not tracked in annual report) or that portion of San Mateo County within CCRWQCB

Attachment A