

**Comments on Revised Tentative CVRWQCB
Ag Waiver Monitoring and Reporting Program**

Comments Submitted by

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Recently the CVRWQCB Ag Waiver staff provided a revised Tentative Monitoring and Reporting Program (MRP) for review and comment. As with past MRPs, I am providing comments on issues that need to be revised in order to develop adequate and reliable data/information as part of the Ag Waiver water quality monitoring program. My previous comments on earlier versions of the MRP are available from my website, www.gfredlee.com.

Overall, the currently proposed Monitoring and Reporting Program is significantly improved over the past versions of it. The key to this program is how well it will be implemented in a timely manner. Presented below are several aspects of the currently proposed MRP that need attention.

Page 5, paragraph 3, first line, there is a typo on the word “must.”

Page 6, first full paragraph mentions collecting a sufficient number of samples for the “... *calculation of the load discharged for every parameter monitored.*” It should be pointed out that it is not possible to reliably monitor the constituent load at a particular monitoring point for many of the constituents of concern, since many of them are associated with bedload transport. It is well established from USGS and other studies that bedload transport of potential pollutants in rivers and streams can be the most important part of the total pollutant load passing a monitoring point. The basic problem is that, with very few exceptions, without the implementation of extraordinary monitoring approaches it is not possible to reliably estimate bedload transport, since the sampling of the bedload to determine mass flux is virtually impossible to do reliably.

Table 1

On page 8, Table 1 continues to have significant problems with the presentation and monitoring of certain parameters.

pH and DO. The time of day at which these measurements are made should be part of the data recording, since the magnitude of the measurement in many waterbodies depends on the time of day when the measurements are made. As discussed in my previous comments, in order to properly assess violations of the pH and DO Basin Plan objectives, it is necessary to make measurements of these parameters in the early morning and late afternoon. The least that should be done is to require that the time of day when measurements are made be recorded with the pH

and DO data, so that those who review these data can potentially understand that the reported values may not be extremes for these parameters that can be found on a particular day.

EC and TDS. The CVRWQCB should allow those conducting Ag Waiver monitoring to eventually drop TDS measurements and use the EC along with a site-specific conversion factor for EC to TDS as a measure of the total salt content of the water. This will save funds by eliminating the TDS measurements.

Total Organic Carbon. Total organic carbon is not a physical parameter and should be removed from the “physical parameters” list. Further, the maximum PQL and Reporting Unit for Total Organic Carbon should not be micrograms per liter, but milligrams per liter.

Note: Rather than using a “u” for “micro,” all XP-based operating systems have a built-in function, where, if the NumLock is on, the “Alt” key can be used to enter special codes. “Alt-0181” (on the numeric keypad only) is the code for “μ.”

Pesticides. Under “Organochlorines,” as I have repeatedly pointed out in comments on previous MRPs, measuring chlorinated hydrocarbon “legacy” pesticides (such as DDT, dieldrin, methoxychlor) in the water column is essentially a waste of funds, since these legacy pesticides can bioaccumulate to excessive levels in edible fish tissue at concentrations that are less than the detection limit for these pesticides in water samples. A far more reliable and cost-effective approach for evaluating whether these legacy pesticides are still being contributed to cause excessive concentrations of these chemicals in fish, which is a threat to cause cancer in those who use the fish as food, is to obtain a representative sample of fish from the monitoring area and determine whether these fish have excessive concentrations of these chemicals in the fish tissue. This only needs to be done once per year for several years. If after several years there are no exceedances of the OEHHA guidelines for excessive concentrations of these chemicals, then further monitoring of fish for them would not be necessary. Based on our previous studies, toxaphene should be added to the list of chlorinated hydrocarbon pesticides that are monitored for in the Central Valley, since it has been found at excessive concentrations in Central Valley fish.

It should be pointed out that OEHHA has just provided revised proposed fish tissue screening values for protection of human health:

Klasing, S. and Brodberg, R., “Development of Guidance Tissue Levels and Screening Values for Common Contaminants in California Sport Fish: Chlordane, DDTs, Dieldrin, Methylmercury, PCBs, Selenium, and Toxaphene,” Draft GTL Report, Pesticide and Environmental Toxicology Branch, Office of Environmental Health Hazard Assessment, California Environmental Protection Agency, Sacramento, CA, February (2006). <http://oehha.ca.gov/fish/gtlsv/pdf/draftGTLsvchddt.pdf>

This past week I reviewed the proposed changes in OEHHA human health fish tissue screening values and will be developing a report on this issue. The most important changes are an increase in the allowable cancer risk from one additional cancer case in 100,000 people who consume fish with one or more chemicals at the screening value over their lifetime, to one additional cancer

case in 10,000 people over their lifetime. Another change is the fish consumption rate used to establish screening values. In 2002 Dr. Anne Jones-Lee and I completed a comprehensive report for the CVRWQCB on excessive bioaccumulation of organochlorine “legacy” pesticides in Central Valley fish. This report,

Lee, G. F. and Jones-Lee, A., “Organochlorine Pesticide, PCB and Dioxin/Furan Excessive Bioaccumulation Management Guidance,” California Water Institute Report TP 02-06 to the California Water Resources Control Board/Central Valley Regional Water Quality Control Board, 170 pp, California State University Fresno, Fresno, CA, December (2002). <http://www.gfredlee.com/OCITMDLRpt12-11-02.pdf>

provides information on the recent organochlorine fish tissue concentrations relative to the OEHHA fish screening values that were established a number of years ago. It is my assessment that, for a number of waterbodies, the adoption of the proposed OEHHA screening values by OEHHA, and their subsequent implementation into regulatory requirements by the CVRWQCB, will result in the finding that fish from at least some, and maybe most, waterbodies in the Central Valley contain these chemicals at concentrations below the new screening values. I will be reviewing this matter and providing a report on it when I have time.

Another chemical that needs to be added to the list of organochlorines that should be monitored in fish tissue is PCBs. PCBs are organochlorine compounds that were widely used for many purposes. They are not pesticides; however, even though their use was banned many years ago, they are still found in some discharges at levels that can bioaccumulate to excessive levels in fish tissue. There will be situations where Ag-discharge-dominated waters will contain PCBs associated with spills, illegal discharges, etc. They should be part of the MRP for fish tissue analysis. Like the organochlorine “legacy” pesticides, it is inappropriate to require monitoring of PCBs in the water column, since they can bioaccumulate to excessive levels in fish tissue at water column concentrations below the detection limit. Note: Both the organochlorine pesticides and PCBs tend to be associated with organic carbon on sediment particles. However, monitoring for these chemicals in sediments is not a reliable approach for estimating their concentrations in fish tissue.

Metals. Mercury should be added to the list of metals that are monitored. As discussed in previous comments, Ag interests in the Central Valley use irrigation water that, at times, has elevated concentrations of mercury from upstream sources. This can result in agriculture then being a discharger of mercury. Again, the approach that should be used to screen for this kind of problem is to measure mercury in fish tissue once each fall for several years. The revised OEHHA proposed screening values lower the allowed mercury content of fish. If mercury is found at excessive concentrations in fish tissue from an Ag-dominated waterbody, then the Ag interests should be required to monitor the water column for methylmercury to determine its source. Chris Foe can provide additional information on this issue.

Nutrients. There is no need to monitor for nitrite and nitrate separately. The analytical methods available can measure the sum of the two.

Hardness is not a nutrient and should be removed from the “nutrient” list and placed in another category, such as “Other.”

As I have discussed in previous comments on the MRP, the nutrient data that will be generated from this monitoring will be uninterpretable with respect to water quality impacts. In addition to monitoring for the nutrient chemicals, planktonic algal chlorophyll and Secchi depth should be monitored. They would indicate whether the water sample at the monitoring location has the potential to impair beneficial uses associated with the presence of planktonic algae. In addition, those conducting the monitoring should assess whether there are extensive growths of water weeds, such as water hyacinth, duckweed and emergent plants such as egeria and attached algae. In my previous MRP comments of last November I have discussed the kind of monitoring program that is needed to begin to be able to interpret the nutrient data in terms of impairment of the beneficial uses of a waterbody.

Sediment Sampling. At the bottom of page 9, in Table 1, “Sediment Sampling” is listed as the last item. It should be moved to the next page, with the formatting.

TOC should be added to the parameters that are monitored under “Sediment Sampling Constituents.”