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Comments on San Francisco Bay Regional Water Quality Control Board Strategy for Control of Toxics in Stormwater Runoff

Via email: bjj@rb2.swrcb.ca.gov

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Copy to Tom Mumley

Bill,

Following up on your presentation on urban stream toxicity control strategy, as I indicated during the telephone conference call, based on my having been involved in urban area runoff toxicity evaluation for about 10 years (starting in the mid-1990s in Orange County, and then more recently in Stockton and the Central Valley), I find that the approach that you have outlined for addressing stormwater runoff aquatic life toxicity in Bay Region streams is appropriate. While there are a number of details to be worked out, the key issue to success of this program will be the ability to get adequate ongoing monitoring of urban stormwater runoff aquatic life toxicity. In the past the focus of a lot of the Bay Region monitoring was on diazinon measurements. In the future it should be on toxicity measurements because of the shift from one type of pesticide to another. I found that the outline in your "presentation of topics" and your discussion of them is in accord with issues that I have been discussing over the last half a dozen years.

While several of those who participated in the meeting complained about the expense of toxicity monitoring, properly conducted monitoring is part of managing urban stormwater runoff water quality. This expense should be borne by the urban population who wish to use pesticides and other chemicals on their property.

Meaningful monitoring programs require total toxicity monitoring using *Ceriodaphnia* for freshwater and *Mysidopsis* for marine waters, and appropriate freshwater or marine fish larvae. Where toxicity is found with a significant number of deaths in two days, followup studies should be conducted on the same samples, with a toxicity test dilution series, with and without PBO. This approach was used successfully in our Orange County Upper Newport Bay studies, where we defined the presence of toxicity and its magnitude, and initiated a preliminary TIE to determine whether it was OP-caused or pyrethroid-caused toxicity. The sampling should be specifically targeted to event-based runoff situations as well as between runoff events.

Toxicity testing must be an ongoing effort since, as you pointed out, the current regulatory approach for regulating pesticides at the federal and state level does not protect waterbodies from aquatic life toxicity.

Many of the deficiencies you discussed in the registration of pesticides are issues that I have been discussing for about eight years. In connection with my work with the CVRWQCB, Dr. Anne Jones-Lee and I developed the Proactive Approach for screening pesticides for potential environmental impacts associated with their first use in a particular manner in a particular watershed. This approach should become part of the aquatic life toxicity management program. Adoption of the Proactive Approach that we developed would go a long way toward making up for the deficiencies in the US EPA OPP and DPR registration process. This approach is presented on my website at,

Jones-Lee, A. and Lee, G. F. , “Proactive Approach for Managing Pesticide-Caused Aquatic Life Toxicity,” Report of G. Fred Lee & Associates, El Macero, CA, October (2000). http://www.gfredlee.com/proactivepest_1000.pdf

Lee, G. F., “Proactive Approach for Managing Pesticide-Caused Aquatic Life Toxicity,” PowerPoint Presentation to the Sacramento River Watershed Program Toxics Subcommittee, Sacramento, CA, September 26 (2001).
<http://www.gfredlee.com/ProActivePest.pdf>

One of the issues you did not address in your presentation is how you are going to address additive and synergistic toxicity among pesticides and between pesticides and other chemicals. If you did not discuss this in your report, you should, where you include the potential for toxicity to at least be additive for similar kinds of chemicals and, for some – such as the triazines and OPs – to be synergistic (i.e., toxicity is more than the sum of the toxicities).

Another area that you did not specifically address in the slides or in the discussion is the toxicity of sediments. As I am sure you are aware, sediment toxicity, apparently due to pyrethroid-based pesticides, is becoming quite common. With the widespread use of pyrethroid-based pesticides in urban areas, there should be associated sediment toxicity. This should be part of the standard toxicity testing.

If you should encounter situations where you feel I might be of assistance in helping to support your advocated strategy, please give me a call.

Fred

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