



October 1st, 2012

Geotechnical
Environmental
Water Resources
Ecological

Betty Yee
Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670

**Re: 2012 Triennial Review of the Water Quality Control Plans for the
Sacramento River and San Joaquin River Basins and Tulare Lake Basin**

Dear Ms. Yee:

We contacted the Central Valley Regional Water Quality Control Board (Regional Board) in fall 2010 on behalf of our client, the International Copper Association and Copper Development Association (ICA/CDA), to request information concerning the region's copper criteria and the schedule of the upcoming triennial review of the Water Quality Control Plans for the Sacramento River and San Joaquin River Basins and Tulare Lake Basin (Basin Plans). ICA/CDA played a significant role in sponsoring scientific research used in development of the freshwater Biotic Ligand Model (BLM) for copper, which was adopted by the United States Environmental Protection Agency (EPA) in its latest national ambient water quality criteria (EPA 2007). ICA/CDA is now interested in encouraging efforts by states and tribes to incorporate these latest recommended EPA national criteria for copper into their water quality standards programs.

It is our understanding that the triennial review of the Basin Plans is currently underway and that public comments on the proposed amendments are due by October 10th, 2012. Thus, the purpose of this letter is to urge the Regional Board to consider updating its aquatic life criteria for copper to use the BLM as currently recommended by EPA.

The current aquatic life criteria in the California Toxics Rule (CTR) used to derive freshwater copper standards, like most states' criteria, only take into account hardness as a factor that modifies toxicity. Using only hardness as a modifying factor for metals criteria is an outdated approach that excludes a substantial body of peer-reviewed scientific literature demonstrating that additional modifying factors can and should be incorporated into regulatory benchmarks or standards, while providing the same levels of aquatic life protection required under the Clean Water Act (EPA 1985, 1994, 2001, 2007). Like most metals, copper toxicity is a function of its bioavailability, which in addition to being controlled by hardness, is also strongly related to other important factors such as dissolved organic carbon (DOC),

alkalinity, pH, and temperature. The key strength of the BLM is that it accounts for multiple factors—in addition to hardness—that mitigate or exacerbate copper's toxic effect on aquatic life.

Similar to copper, BLMs have been developed, validated, and are available for regulatory use for several other metals, including zinc, lead, nickel, and cadmium. While EPA has yet to develop formal recommended national ambient water quality criteria using BLMs for these other metals, the models are widely available and are being applied in regulatory programs in several European countries and Canada. ICA/CDA fully supports and shares their desire to move towards bioavailability models such as the BLM as being the current state of both scientific and regulatory practice.

There also are practical advantages for using the BLM; it is a cost effective regulatory tool compared to other site-specific toxicity test procedures (e.g., water-effect ratios), and the BLM software is publicly available, sanctioned by EPA, and requires only brief training to generate rapid and useable output. Therefore, BLM-based criteria provide a practical means of deriving demonstrably more accurate levels of aquatic life protection across a broad range of water quality conditions. Ensuring the accuracy of water quality criteria is especially important when evaluating 303(d) and Monitoring and Evaluation listings. There are currently approximately 20 303(d) stream listings for copper in the Central Valley Region. The use of up-to-date, accurate standards would ensure that these listings are appropriate.

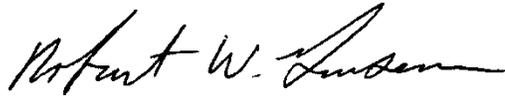
Language supporting the allowance of the BLM as a method for calculating water quality standards could be added to the section Water Quality Objectives for Inland Surface Waters in the Basin Plans.

Please let us know how we can assist the Regional Board in its consideration of the BLM during the triennial review. GEI or ICA/CDA could help in a variety of ways, including preparation of written or oral testimony supporting the technical basis of the BLM, or providing guidance on application of the BLM to water quality criteria and what type of implementation approach would best fit your available datasets. ICA/CDA has also sponsored BLM training sessions over the past several years, and they have been well-attended by both regulators and the regulated community. If desired, it may be possible to provide this course or related education materials if you would find that helpful as a means of helping inform the public and stakeholders as to the basis and application of the BLM.

We appreciate the opportunity to provide you with this prospective proposal. Please let us know if you have any questions. We look forward to discussing this with you further.

Sincerely,

GEI CONSULTANTS, INC.



Robert W. Gensemer, Ph.D.
Senior Ecotoxicologist
bgensemer@geiconsultants.com
(303)264-1130

RWG

cc: Joe Gorsuch, CDA
Steven Canton, GEI
Stephanie Baker, GEI
David DeForest, Windward Environmental
Eric Van Genderen, International Zinc Association

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