



CVCWA Central Valley Clean Water Association

Representing Over Sixty Wastewater Agencies

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Danny McClure
Water Resources Control Engineer
Water Quality Control Board Central Valley Region
11020 Sun Center Drive # 200
Rancho Cordova, CA 95670-6114

Submitted via email to dmcclure@waterboards.ca.gov

RE: Draft Permethrin Criteria Derivation

Dear Mr. McClure:

The Central Valley Clean Water Association (CVCWA) has reviewed the *Draft Water Quality Criteria Report for Permethrin (draft criteria)* prepared by the University of California, Davis. CVCWA is a non-profit organization of agencies that own and operate wastewater treatment facilities throughout the Central Valley. CVCWA represents its members in regulatory matters that affect surface water discharge and land application with a perspective to balance environmental and economic interests consistent with applicable law. Accordingly, CVCWA has a keen interest in the development of draft water quality criteria that may be used by the Central Valley Regional Water Quality Control (Board Regional Water Board) to interpret narrative water quality objectives and/or may be adopted as water quality objectives.

CVCWA continues to be concerned with the Regional Water Board's proposed use of the *draft criteria* to interpret narrative water quality objectives and potential use of the criteria to set water quality based effluent limitations in NPDES permits, thereby creating liability for Central Valley POTWs. Considering the liability associated with such effluent limitations, the Regional Water Board should take care to use only criteria that are well-developed and well-founded.

The chronic criterion is problematic for a number of reasons, including the lack of available data and the use of the default acute to chronic ratio (ACR) for its calculation. Within the *draft criteria*, the authors note that the chronic toxicity data set was a major limitation, with three of the five taxa requirements not met. Without a complete chronic toxicity data set, the authors relied on an ACR to derive the chronic criterion. The authors noted a number of concerns with the approach,

including lack of data on sensitive species such as *Hyalella azteca* or another benthic organism. Due to the use of an ACR to derive the criterion, uncertainty could not be quantified for the chronic criterion. An additional concern noted in the data sets was the inability to account quantitatively for variable effects of temperature on permethrin toxicity.

The authors made at least one significant technical error where they incorrectly calculated the example USEPA acute criterion (page 19) and concluded it was identical to the draft acute criterion of 10 ng/L. Assuming that the example USEPA final acute value was correctly calculated by the authors, the example USEPA acute criterion should be 20 ng/L ($39.001 \text{ ng/L} \div 2 = 19.5 \text{ ng/L}$, rounded to 20 ng/L) instead of 10 ng/L. This incorrect conclusion that the draft acute criterion is identical to the example USEPA acute criterion is repeated on page 20 of the *draft criteria*. Although this does not affect the draft acute criterion, the correctly calculated comparison instead suggests that the draft criterion may be more stringent than necessary to protect aquatic life.

The authors also neglected to include their own recommendation to implement the criteria based on dissolved concentrations of permethrin in the final criteria statement (from page 11 of the *draft criteria*: “*The freely dissolved permethrin concentration is recommended for determination of criteria compliance because the literature suggests that the freely dissolved concentrations are the most accurate predictor of toxicity.*”) Including this in the final criterion statement recommendation is vital for permethrin (and other pyrethroid pesticides) for which the total concentrations will be many times the dissolved concentration under typical ambient conditions and will greatly overestimate the bioavailable concentration and risk of toxicity.

Because there are not adequate data to set a chronic criterion, CVCWA recommends that the *draft criteria* refrain from setting a chronic criterion until additional studies are completed. The USEPA 1985 guidance¹ for deriving numeric water quality criteria states that “It is not enough that a national criterion be the best estimate that can be obtained using available data; it is equally important that a criterion be derived only if adequate appropriate data are available to provide reasonable confidence that it is a good estimate,” and that “If all required data are not available, usually a criterion should not be derived.”

In addition, CVCWA is generally concerned with the Regional Water Board bypassing the USEPA process of deriving water quality criteria to create independent criteria that may be used to interpret narrative water quality objectives. The *draft criteria* should be thoroughly vetted through the public and regulatory process before they are made available for potential use by the Regional Water Board in NPDES permits. Considering the uncertainties associated with the draft criteria, it is ill-advised to utilize them at this stage. Thus, CVCWA respectfully requests that the Central Valley Water Board refrain from using the *draft criteria* for permethrin until the criteria are properly adopted as water quality objectives pursuant to all requirements in Porter-Cologne.

¹ USEPA. 1985. Guidelines for deriving numerical national water quality criteria for the protection of aquatic organisms and their uses, PB-85-227049. Report United States Environmental Protection Agency, National Technical Information Service, Springfield, VA.

Thank you for your consideration. Please contact me at (530) 268-1338 if you have any questions.

Sincerely,



Debbie Webster
Executive Officer – CVCWA

c: Pamela Creedon – Executive Officer, CVRWQCB