

California Regional Water Quality Control Board San Francisco Bay Region

9/22/10 Public Hearing
CA Ocean Plan - Tri Review
Deadline: 9/10/10 by 12 noon



Linda S. Adams
Secretary for
Environmental Protection

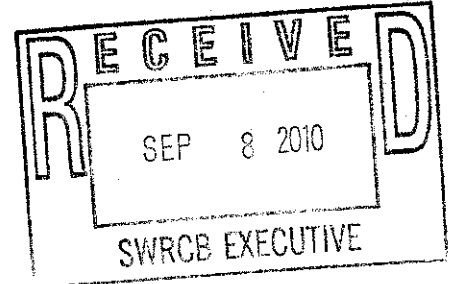
1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
<http://www.waterboards.ca.gov/sanfranciscobay>



Arnold Schwarzenegger
Governor

September 8, 2010

Ms. Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100



Dear Ms. Townsend:

SUBJECT: Comment Letter—California Ocean Plan

We appreciate the opportunity to participate in the State Water Board's triennial review of the *California Ocean Plan*, and offer the following recommendations aimed at updating the Plan to reflect and accommodate the best science available, particularly concerning TCDD equivalents and dilution.

TCDD Equivalents

We recommend that the State Water Board consider revising the Plan's definition of "TCDD equivalents" to allow the use of bioaccumulation equivalency factors (BEFs). The definition should incorporate the best available scientific information regarding the differences in bioaccumulation potential among dioxin and furan congeners. The Plan currently defines "TCDD equivalents" only in terms of the relative toxicity of the congeners.¹ However, just as the congeners exhibit different levels of toxicity, they also exhibit different levels of bioaccumulation potential.

In 1995, USEPA adopted the approach of using both toxicity equivalency factors (TEFs) and BEFs to calculate TCDD equivalents for the Great Lakes System.² In the absence of site-specific BEFs, USEPA supports the use of national BEFs, stating, "...EPA believes that national bioaccumulation factors are broadly applicable to sites throughout the United States and can be applied to achieve an acceptable degree of accuracy when estimating bioaccumulation potential at most sites."³ USEPA also states, "Limited comparison to BEFs calculated from data obtained for other ecosystems confirms these bioaccumulation potential differences for [dioxins and furans] for fish in ecosystems outside the Great Lakes."⁴ Recently, USEPA incorporated the national BEFs into the calculations of the TCDD equivalents for the City and County of San Francisco's Oceanside Water Pollution Control Plant NPDES permit.⁵

In February 2008, the San Francisco Estuary Institute convened an expert panel to provide an unbiased review and analysis of available information regarding San Francisco Bay dioxins and furans. It recommended applying both TEFs and BEFs to dioxin and furan concentrations when calculating TCDD equivalents, concluding that, if suitable data are unavailable to derive site-specific BEFs, use of the BEFs derived for the Great Lakes System is preferable to omitting BEFs

¹ *California Ocean Plan*, p. 27.

² 40 CFR 132, Appendix F, Procedure 4.

³ USEPA, *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000) Technical Support Document Volume 3: Development of Site-Specific Bioaccumulation Factors*, EPA-822-R-09-008, p. 1-2.

⁴ USEPA, *Great Lakes Water Quality Initiative Technical Support Document for the Procedure to Determine Bioaccumulation Factors*, EPA-820-B-95-005, p. 105.

⁵ San Francisco Bay Regional Water Board Order No. R2-2009-062.

California Environmental Protection Agency



altogether.⁶ Our recommendation is that the *California Ocean Plan* be revised to allow the use of national or, if available, site-specific BEFs.

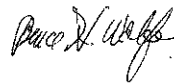
Minimum Initial Dilution

We recommend that the State Water Board consider revising the Plan's definition of "minimum initial dilution." Ocean dischargers should be allowed and encouraged to use as much real-world data as they can and models that are as sophisticated as possible to evaluate dilution at their outfalls. The Plan currently defines "minimum initial dilution" as "the lowest average initial dilution within any single month of the year" and specifies, "Dilution estimates shall be based on...the assumption that no currents, of sufficient strength to influence the initial dilution process, flow across the discharge structure."⁷ In this way, the Plan ensures a margin of safety by requiring very conservative model inputs (e.g., assumptions about flows and currents) appropriate for relatively unsophisticated models and their resulting uncertainties.

We suggest revising the text to allow realistic model inputs (if available) and more sophisticated modeling. The margin of safety could then be provided based on the relative uncertainty of the model. For example, it is now possible to use large data sets representing the full range of flows and currents to model a variety of dilution scenarios (e.g., through Monte Carlo techniques) and predict the probability of obtaining a specific dilution level at any particular time. An adequate margin of safety can be provided, for example, by using the dilution factor likely to occur at least 50% of the time for long-term (e.g., human health) effects and the dilution factor likely to occur at least 95% of the time for short-term (aquatic life) effects. Our recommendation is that the *California Ocean Plan* be revised to provide a consistent framework within which Regional Water Boards may apply their professional expertise and discretion to reflect the best scientific information available concerning dilution. The revised text could read, "For the purpose of this Plan, minimum initial dilution is the lowest initial dilution reasonably likely to occur. Dilution estimates shall be based on the best available information regarding waste flow and receiving water characteristics, and provide a margin of safety that reflects the relative uncertainties of the available information and the dilution models used, and the timeframes for the water quality objectives to be implemented."

We appreciate your consideration of these recommendations. If you have any questions, please contact Bill Johnson of my staff at 510-622-2354 or wjohnson@waterboards.ca.gov.

Sincerely,



Bruce H. Wolfe
Executive Officer

Digitally signed
by Bruce Wolfe
Date: 2010.09.08
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⁶ San Francisco Estuary Institute, *Bay Area Clean Water Agencies' Draft Dioxin Issue Paper: Expert Panel Response and Recommendations*, April 4, 2008 (available at www.waterboards.ca.gov/sanfranciscobay/publications_forms/avail_doc.shtml).

⁷ *California Ocean Plan*, pp. 14-15.