

Memo

To: Santa Ana (SA) Regional Water Quality Control Board (RWQCB)
From: Carrie Claytor, GEI Consultants, representing the Copper Development Association (CDA)
Date: July 22, 2015
Re: **Copper TMDL Scoping Meeting**

- The Copper Development Association (CDA) appreciates the opportunity to provide these remarks.
 - CDA is a not-for-profit association of North American copper producers and fabricators, “committed to promoting the proper use of copper materials in sustainable, efficient applications for business, industry and the home”¹.
- CDA and its contractors have been working to advance the state-of-the-science regarding copper toxicity for over 20 years.
 - As part of these efforts, CDA has funded some of the published research supporting the US Environmental Protection Agency’s (USEPA) development of a tool – the Biotic Ligand Model (BLM) – that can accurately predict the toxicity of copper to aquatic life in both fresh and saltwater environments.
 - **The BLM improves upon the methods to develop metals criteria still in use across much of the U.S.**
 - It more comprehensively incorporates the water quality parameters known to influence the biological availability (bioavailability) of copper in estimating its toxicity.
- In their 2007 Aquatic Life Ambient Freshwater Quality Criteria for Copper², USEPA recommend that States use the freshwater BLM to derive criteria.
 - It is our understanding that the Lahontan and Los Angeles RWQCBs currently allow site-specific use of the freshwater BLM, and the San Diego RWQCB is considering it.
- Leveraging the significant amount of research on the effects of copper to saltwater organisms that has been done since the 1985 revision of the criteria document, a saltwater BLM has also been developed, and the USEPA plans to incorporate it into their next national criteria update, currently scheduled for release in 2016³.

¹ From CDA Mission Statement, available at: http://www.copper.org/about/cda_mission.html

² Available at: http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/copper/2007_index.cfm

³ See attached letters to/from USEPA Director of Health & Ecological Criteria, Division Office of Water



- The saltwater BLM accounts for pH, temperature, salinity, and DOC, which are the most important factors controlling copper toxicity and are not accounted for in the fixed-value California Toxics Rule (CTR) criteria.
 - **Because it represents the most rigorous and up-to-date approach for assessing the potential for risks to marine aquatic life due to copper exposure, CDA would like to urge the SARWQCB to incorporate the saltwater BLM into the Newport Bay TMDL process.**
 - The State Water Resources Control Board, in its approval of the Los Angeles RWQCB's Marina Del Rey copper TMDL, indicated that the saltwater BLM will be used to revise the copper criteria and corresponding TMDL once it has been approved by USEPA⁴.
- BLMs have also been developed for other metals and media (such as zinc and nickel in freshwater and copper in soils) and CDA and its other metals association partners would be happy to provide more information if the SARWQCB would find it useful for its work on the non-TMDL action plans or other activities underway.
- We understand the TMDL process has, in large part, been triggered by surface water and sediment porewater exceedances of the CTR acute and chronic copper water quality standards in Newport Bay, based on the 2007 study conducted by Orange County Coastkeeper⁵.
 - However, the 2007 Coastkeeper study also indicates that no significant toxicity to sensitive species was observed in water and sediment porewater samples collected from Newport Bay during their study.
 - The data summarized in that report also suggest that, were the saltwater BLM used to estimate toxic effect levels, concentrations in Newport Bay would, in fact, not exceed these site-specific predictions most of the time, which is more consistent with the observed toxicity than that suggested by the CTR criteria.
 - The saltwater BLM was also able to more accurately predict toxicity than the CTR criteria in the Shelter Island Yacht Basin of San Diego Bay⁶.
 - **Because these field toxicity measurements and BLM results raise significant uncertainties regarding the basis for this TMDL action, we hope the SARWQCB will derive site-specific criteria using a bioavailability-based approach and consider those criteria when making the final determination on what source control measures, if any, are needed to protect aquatic life in Newport Bay.**

⁴ See Resolution No. 2014-0049 available at: http://63.199.216.6/bpa/docs/R14-004_SB_RSL.pdf

⁵ Available at:

http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/docs/newport/finalcufinal_report.pdf

⁶ See Bosse et al., 2014. Copper bioavailability and toxicity to *Mytilus galloprovincialis* in Shelter Island Yacht Basin, San Diego, CA. Marine Pollution Bulletin 85: 225 -234.



- **CDA and its contractors would be happy to participate collaboratively with the SARWQCB in any discussions on this matter, either on their own or as part of a stakeholder group, if such a group is formed.**
 - We are aware of a fine example of collaboration between stakeholders (i.e., the Nitrogen and Selenium Management Program [NSMP]) and the SARWQCB in their work to revise the selenium TMDL being developed for this watershed⁷.
 - As part of this process, the NSMP has provided data from multiple studies as well as technical support and innovation.
 - Since the saltwater BLM is not currently publicly available, CDA is also willing to facilitate access to the modeling software and provide training if desired⁸.

- **Ultimately, use of bioavailability approaches such as the BLM, represents not only the current state of the science, but also the growing state of regulatory practice across the U.S., and in fact the world, for metals in the aquatic environment. We urge the SARWQCB to use the latest scientific and regulatory tools for this important matter that will influence many in the Newport Bay watershed. Thank you for the opportunity to provide these comments.**

⁷ More information can be found at: <http://www.ocnsmp.com/index.asp>

⁸ In advance of USEPA's 2016 release of its draft update of the copper saltwater national recommended water quality criteria for public comment, a manuscript for peer-reviewed publication, discussing the scientific basis for the update, is now in preparation. Further, a trial version of the saltwater BLM software is being prepared.

Consulting
Engineers and
Scientists



**Letters to/from USEPA Director of Health & Ecological Criteria,
Division Office of Water, Regarding National Recommended Water
Quality Criteria for Copper Update to Include the Saltwater Biotic
Ligand Model**

STATE CAPITOL
PO BOX 942849
SACRAMENTO, CA 94249-0012
(916) 319-2012
FAX (916) 319-2112

Assembly California Legislature

DISTRICT OFFICE
3719 TULLY ROAD, SUITE C
MODESTO, CA 95356
(209) 576-6425
FAX (209) 576-6426



KRISTIN OLSEN
ASSEMBLY REPUBLICAN LEADER
ASSEMBLYMEMBER, TWELFTH DISTRICT

April 1, 2015

Dr. Elizabeth Behl, Director

Health & Ecological Criteria, Division Office of Water

Mail code: 4301M

US Environmental Protection Agency

Ariel Rios Building

1200 Pennsylvania Avenue, N.W.

Washington, DC 20460

Director Behl -

I urge that the USEPA Office of Water complete its review of the Copper Marine Biotic Ligand Model [BLM] for metals in salt water.

This issue is important to boaters as it impacts decisions made by the state and regional water quality control boards that address copper including the copper-based anti-fouling paints used on boat hulls in salt water.

When adopted by USEPA, this water quality criteria document will be available for use in California and will allow for more accurate marine and estuarine water quality criteria to be developed to protect the environment and to create more scientifically defensible regulatory actions rather than the arbitrary one-size-fits all number that is currently used.

This BLM uses the latest science to calculate water quality criteria for copper on the basis of water quality conditions at a specific water body/site. The water chemistry is measured at that site and put into the model to calculate protective water quality criteria for that specific site. This is widely recognized as a scientifically proven method.

Adoption of the action by the USEPA will help all parties involved establish protective and accurate water quality criteria.

Thank you for your consideration of this matter.

A handwritten signature in black ink, appearing to read "Kristin Olsen". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Kristin Olsen
Assembly Republican Leader
Assembly Member, 12th District



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 22 2015

OFFICE OF
WATER

The Honorable Patricia C. Bates
California State Senator
State Capitol
Sacramento, CA 95814

Dear Ms. Bates:

Thank you for your letter dated April 6, 2015, supporting the Agency's efforts to develop a Biotic Ligand Model (BLM) for copper in marine and estuarine systems. The Environmental Protection Agency (EPA) appreciates the interest from the California Legislature, as well as the other stakeholders who have previously contacted EPA regarding the status and progress of the saltwater copper BLM.

We are in the process of completing the saltwater copper BLM aquatic life criteria document. All EPA aquatic life criteria documents undergo a rigorous internal peer review process, independent external peer review, and then are released to the public in draft form to obtain comments, in order that the final documents reflect the best available science. Our internal review and external peer review will be completed in 2015. We anticipate sending the draft criteria out for public review in 2016.

Once again, thank you for your support and interest and your recent letter regarding the saltwater copper BLM. If you have any questions or concerns with respect to your letter, please contact Kathryn Gallagher, Ph.D., Chief, Ecological Risk Assessment Branch, at 202-564-1398, or via email at gallagher.kathryn@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Elizabeth Behl".

Elizabeth Behl, Director
Health and Ecological Criteria Division



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 22 2015

OFFICE OF
WATER

The Honorable William P. Brough
Assembly Member, Seventy-third District
29122 Ranch Viejo Drive, Suite 111
San Juan Capistrano, CA 92675

Dear Mr. Brough:

Thank you for your letter dated April 6, 2015, supporting the Agency's efforts to develop a Biotic Ligand Model (BLM) for copper in marine and estuarine systems. The Environmental Protection Agency (EPA) appreciates the interest from the California Legislature, as well as the other stakeholders who have previously contacted EPA regarding the status and progress of the saltwater copper BLM.

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Sincerely,

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Elizabeth Behl, Director
Health and Ecological Criteria Division