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Via Email

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Department of Health Services
Office of Regulation
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Subject: Proposed Regulations Regarding Lead and Copper Requirements for Drinking Water

Tri-TAC appreciates the opportunity to provide comments regarding the Department of Health Services' (DHS') proposed drinking water regulations for copper and lead. Tri-TAC is a statewide technical advisory group for the California Association of Sanitation Agencies, the California Water Environment Association, and the League of California Cities. Together these groups represent publicly owned treatment works (POTWs) that treat approximately 90% of the sanitary wastewater in California.

We are submitting these comments to encourage DHS to consider the potential impact of the proposed regulations on California POTWs in meeting discharge standards for copper and to consider modifications to the proposed regulations to more actively trigger corrosion control programs for drinking water systems. We believe these regulations, with some modification, can play a significant role in enabling POTWs throughout the state to significantly reduce pollutant discharges to California waterways and to assist POTWs in complying with regulatory requirements designed to protect the health of these waterways.

By way of background, copper is one of the heavy metals that has been determined to have adverse effects on aquatic life and, as a result, POTWs throughout California are faced with increasingly stringent limitations on the level of copper allowed in their wastewater effluent based on their National Pollutant Discharge Elimination System (NPDES) permits. Water quality criteria for copper for the protection of aquatic life were established in the California Toxics Rule (40CFR Part 131) in saltwater as 4.8 µg/L as a maximum and 3.1 µg/L as a continuous criteria. In freshwater, the criteria established by the California Toxics Rule (CTR) are hardness dependent and may

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range from an acute criteria of 7.3 µg/L (hardness of 50 mg/L) to 27 µg/L (hardness of 200 mg/L) and a chronic criteria of 5.23 µg/L (hardness of 50 mg/L) to 17 µg/L (hardness of 200 mg/L).

For many POTWs in California, it is difficult if not impossible to meet the effluent limits that are calculated from the CTR criteria. As an example, a comparison of copper effluent levels and final NPDES permit limits for some selected California POTWs are shown in Table 1. As you can see, these existing and proposed limitations are significantly lower than the DHS proposed drinking water action level of 1.3 mg/L for the 90th percentile of tap water samples evaluated.

Table 1: Copper Effluent Levels and NPDES Permit Limits

POTW	POTW Size (MGD)	Average Cu Effluent Conc. (µg/L)	Maximum Cu Effluent Conc. (µg/L)	NPDES Monthly Average Effluent Limit (µg/L)
Pinole-Hercules Water Pollution Control Plant	3.2	4.2	8	20
Fairfield-Suisun Sewer District	17.5	4.3	10	6.7*
Central Contra Costa Sanitary District	45	5.3	8	14.2
Palo Alto Regional Water Quality Control Plant	28	6.5	17	12*
City of Yuba City	6	6.8	13	1.4*
Delta Diablo Sanitary District	10.4	6.9	12.5	3.5*
City of Davis	5.4	10.3	13	9 ²
Novato Sanitary District	6.2	11	19.1	2.4*
University of California, Davis	1.6	11.7	18	13
LACSD – Saugus WRP		13	47	31
East Bay Municipal Utility District	72	15.4	48	37 ³
Dublin San Ramon Sanitary District	11.5	32	65	23

*Proposed final limit. Current permit contains a higher interim limit.

2 Effluent limit calculated for a hardness of 100 mg/L.

3 Interim limit. Final limit will be lower.

These kinds of stringent effluent limitations have led several wastewater agencies to conduct studies to determine sources of copper contributions coming into their sewerage systems. Consistently, a major source, and in many cases the largest source, has been corrosion of copper plumbing. The Palo Alto Regional Water Quality Control Plant¹ and the Novato Sanitary District² have each estimated that corrosion accounts for approximately 60% of the influent copper loading (e.g., loading in terms of pounds per day) to their treatment plants. The East Bay Municipal Utility District has estimated that corrosion accounts for 58% of their influent

¹ Palo Alto Regional Water Quality Control Plant. Clean Bay Plan 2003. February 2003.

² Novato Sanitary District. Copper Reduction Study. December 1, 2001.

loading.³ The City of San Mateo has estimated that corrosion accounts for 39% of the influent copper loading.⁴

Historically, industries were once a significant source of copper to POTW sewerage systems. But with the advent of the Federal Pretreatment Program in the 1980s and the application of source control on industrial dischargers such as metal finishers, the industrial source contribution decreased, and corrosion from water plumbing systems became a significant source. Corrosion control of the water supply has proven to be the single most effective approach to reducing influent wastewater copper loadings for the San Francisco Bay Area POTWs that have attempted to meet copper effluent limits through source control and pollution prevention programs. Marginal reductions have been achieved through pollution prevention programs targeting commercial sources such as vehicle service facilities and printers. However, with respect to corrosion, the experience of Novato Sanitary District is instructive.

The Novato Sanitary District performed a source identification study for copper and determined that the primary source was residential copper piping.⁵ The District was able to reduce its effluent copper loadings by working with its single water purveyor, the Sonoma County Water Agency (SCWA), to adjust the pH of the water supply from approximately 7.5 to 8.5. Prior to pH control in 1995 the influent wastewater copper concentration was 140 µg/L. In 1996, after implementation of pH control, the influent wastewater copper concentration decreased to 57 µg/L, representing a reduction of 55%. Since POTWs incidentally remove metals as a result of solids reduction, there were more dramatic changes in the effluent wastewater copper concentrations. In 1995 the effluent concentration was 29 µg/L and decreased to 12 µg/L in 1996.

Other northern California POTWs have also experienced significant copper loading reductions as a result of corrosion control including Sonoma Valley County Sanitation District, Dublin San Ramon Services District, and Fairfield Suisun Sewer District. However, POTWs that may benefit from implementation of corrosion control for the water supply are not always able to successfully work with their water purveyors to initiate such studies due to the high regulatory triggers for drinking water in comparison to the wastewater water quality criteria. We therefore recommend that DHS consider modifying the proposed regulation to include provisions requiring water agencies to consider the need for wastewater agencies to meet effluent discharge requirements as an additional trigger for conducting corrosion optimization studies in the proposed Lead and Copper Rule. We believe this modification could result in significant reductions in copper discharged by POTWs to impaired water bodies throughout the state with

³ East Bay Municipal Utility District. NPDES Feasibility Analysis for Achievement of Project final Effluent Limits for EBMUD Main Wastewater Treatment Plant. May 23, 2001.

⁴ Karmendy, K., City of San Mateo. Letter to L. Barsamian. City of San Mateo Final Effluent Limits Infeasibility Study. May 23, 2001.

⁵ Water Environment Research Foundation. Tools to Measure Source Control Program Effectiveness. Project 98-WSM-2. 2000.

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significant environmental and monetary benefits that should be evaluated by DHS as part of this rulemaking.

Thank you for your consideration of our comments. Should you have any questions or need additional information, please feel free to contact Monica Oakley, the Co-Chair of the Tri-TAC Water Committee at 925/962-9700.

Sincerely,

A handwritten signature in cursive script that reads "David R. Williams".

David R. Williams
Chair, Tri-TAC

cc: Art Baggett, Chair, State Water Resources Control Board

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