EAST BAY
MUNICIPAL UTILITY DISTRICT

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Mr. Michael Baes (mbaes@oehha.ca.gov)
Pesticide and Environmental Toxicology Branch
Office of Environmental Health Hazard Assessment
California Environmental Protection Agency
1515 Clay St., 16th floor
Oakland, California 94612

Dear Mr. Baes:

RE: Comments on OEHHA Hexavalent Chromium Public Health Goal Report (December 2010)

The East Bay Municipal Utility District provides drinking water to 1.3 million customers in Alameda and Contra Costa counties. Our 325 square mile service area covers a large portion of the eastern side of San Francisco Bay. As a water supplier, we must follow the reporting and public notification requirements associated with the Public Health Goals (PHGs).

We appreciate the opportunity to comment on this document and have the following recommendations:

1) The risk characterization section in the draft PHG report should include an assessment of the risk associated with the formation of Chromium 6 from Chromium 3 following exposure to a disinfectant such as ozone, chlorine, or chloramine. In order to fully characterize the risk posed by Chromium 6, OEHHA should acknowledge this source of Chromium 6 and incorporate a microbiological risk component into the discussion.

   Under Section 116365 of the Health and Safety Code, OEHHA is required to "...prepare and publish an assessment of the risks to public health posed by each contaminant for which the department proposes a drinking water standard." This assessment should encompass "...possible synergistic effects resulting from exposure to, or interaction with, two or more contaminants." (Health and Safety Code Section 116365 (c)1(C)i). Under the Health and Safety Code (Section 116275 (a)) the term "contaminant" covers "... any physical, chemical, biological, or radiological substance or matter in water."

   The draft PHG report does not identify the conversion of Chromium 3 to Chromium 6 following exposure to a disinfectant such as ozone, chlorine, or chloramine as a source of Chromium 6. Pathogen inactivation and Chromium 6 production occur simultaneously and present different public health threats. However, the draft PHG

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report addresses only the chemical threat. This approach may present an inherent threat to public health.

Risk characterization should enumerate the microbiological risks (USEPA 2009) associated with the current disinfection practices and compare them to the health risk associated with the conversion of Chromium 3 to Chromium 6 via the interaction of a disinfectant and Chromium 3. This will ensure the risk managers have the tools and information needed to balance the microbial and chemical contaminant risks when setting the Chromium 6 PHG. Incorporating both the chemical and microbiological risk endpoints in the Chromium 6 risk assessment will produce a more balanced document based solely on public health considerations and defensible under the statutory criteria.

Under the Health and Safety Code, water utilities detecting contaminants above the PHG are required to publish a public report detailing what the utility is doing to lower the contaminant concentration and why. As the agency responsible for the assessment of risk to public health, OEHHA must acknowledge the chemical and microbiological risks. This will contribute to the public's understanding of the chronic chemical risks and the acute threat of waterborne disease.

2) We recommend the following references be incorporated into the report to ensure the toxicological literature review is exhaustive:

De Flora, S; Badolati, GS; Serra, D; et al. (1987). Circadian reduction of chromium in the gastric environment. Mutat Res 192(3); 169 – 174.

Gammelgaard, B.; Jensen, K.; Steffansen, B. (1999). In vitro metabolism and permeation studies in rat jejunum: Organic chromium compared to inorganic chromium. J Trace Elements Med Biol 13: 82 – 88.

Petrilli, F.L.; de Flora, S. (1982). Interpretations on chromium mutagenecity and carcinogenicity. In: Sorsa, M.; Vainio, H. (Eds.) Mutagens in our environment. New York, Alan R. Liss, Inc. pp. 453 – 464.

Thank you for considering these comments. Should you have any questions, please contact me (510.287.1338; rhunsing@ebmud.com) or Dr. Richard Sakaji (510. 287.0964; rsakaji@ebmud.com).

Sincerely,

Ron Hunsinger
Manager Water Quality

References

USEPA "Protocol for Microbial Risk Assessment to Support Human Health Protection for Water-Based Media (DRAFT)," July 30, 2009, Office of Science and Technology Office of Water U.S. Environmental Protection Agency Washington, DC 20460. (*http://yosemite.epa.gov/sab/sabproduct.nsf/0/DADB7C7D689EA5C58525753600614BBA/$File/Draft+MRA+Protocol+July+30+2009+for+DWC+Sept+21-22+2009+Meeting.pdf*)