



American Water Works
Association



CALIFORNIA-NEVADA SECTION
American Water Works Association

October 11, 2013

Office of Regulations
California Department of Public Health
MS 0507
P.O. Box 997377
Sacramento, CA 95899-7377

RE: Notice of Proposed Rulemaking, Title 22, California Code of Regulations,
Hexavalent Chromium MCL (DPH-11-005)

Dear Sir or Madam,

The California-Nevada Section of the American Water Works Association (CA-NV AWWA) and American Water Works Association (AWWA) appreciate the opportunity to comment on the California Department of Public Health's proposed hexavalent chromium (Cr(VI)) drinking water standard.

CA-NV AWWA is an organization of the professional drinking water community, whose approximately 4,700 members in California are committed to providing safe and reliable water to the public. With approximately 50,000 members throughout North America and beyond, AWWA is the world's largest nonprofit, scientific and educational association dedicated to managing and treating water.

Community water systems in California are committed to providing safe water to the public. The Office of Environmental Health Hazard Assessment identified Cr(VI) as a potential health threat in drinking water. Drinking water systems have been working with the scientific and engineering research communities for several years to understand risks and identify solutions to remove Cr(VI).

The professional drinking water community will work with dedication and diligence to meet the CDPH's final Cr(VI) maximum contaminant level (MCL). Unfortunately, this treatment is expensive and likely to result in increased water rates. In addition, based on practical

experience, we believe that the true costs to the public will be far greater than those estimated by CDPH.

Through a collaborative effort of the drinking water utility associations, water systems have pulled together available information to meet CDPH's request for public comment. Attached are two technical memoranda prepared by Jacobs Engineering Group (Jacobs) and Water Quality and Treatment Solutions (WQTS) that provide a detailed evaluation of CDPH's proposed standard and the associated cost of implementation. We hope that this information will assist CDPH in completing its selection of a health protective and affordable hexavalent chromium standard. We ask that the Department give careful consideration to the information provided in these two technical memoranda.

In particular, it is the expert judgment of our collective membership that:

1. There are a number of opportunities for CDPH to improve on its initial cost analysis, and additional analysis is necessary to support the department's selection of a final MCL.
2. The final Cr(VI) drinking water standard must provide water systems sufficient time to come into compliance before the standard is effective.
3. CDPH was instructed by the legislature to promulgate a Cr(VI) drinking water standard; the Department should not create confusion by also requiring Department-approved distribution system chromium speciation studies as described in the proposed rule.

The protection of public health is always our first priority. In addition, the cost consequences of a Cr(VI) standard are significant and should be fully understood. Across California, Cr(VI) is primarily a naturally occurring compound. Regardless of the level selected for the final MCL, in virtually all communities the cost of treatment will fall directly on individual households and businesses. The attached occurrence analysis by Jacobs indicates that the CDPH analysis underestimates the number of sources impacted by an MCL of 10 µg/L. An alternate occurrence calculation approach suggested by Jacobs estimates the number of impacted sources at an MCL of 10 µg/L to be 1,360 -- 1,049 more than estimated by CDPH.¹

The CDPH's preliminary analysis indicates that some households will experience unaffordable monthly water rates, with water rates reaching \$469/month simply to pay for compliance with

¹ Jacobs Engineering Group. *Technical Review of the Occurrence Analysis Used in the Draft Hexavalent Chromium MCL by California Department of Public Health (DPH-11-005)*. October, 2013. Table 1.

a Cr(VI) standard of 10 µg/L.² The attached WQTS analysis demonstrates that when costs are adjusted to more completely account for household water usage, actual peaking factor used in facility design, land acquisition, and building construction, the proposed Cr(VI) standard will cost even more than CDPH estimated.³ The affordability challenge presented by a treatment standard for Cr(VI) is clear when compared to the National Drinking Water Advisory Council water treatment affordability criteria and when looked at as an increase to the current cost of drinking water in affected communities.^{4,5}

Prior and ongoing experience demonstrates that compliance with challenging water quality standards can be particularly difficult on small, disadvantaged communities. For example, after more than a decade since the arsenic rule became final, many small systems are not yet able to comply with the standard.⁶ By comparison, the analyses by Jacobs and WQTS demonstrate that a low-level Cr(VI) standard is equal or more challenging than the arsenic rule and impacts a large number of small water systems.⁷

Limitations in CDPH's analysis that are described in the WQTS analysis have important implications for policy makers. The preliminary CDPH analysis is not consistent with existing California policies in at two respects, and consequently underestimates the cost of treatment in impacted systems:

1. The existing California Waterworks Standards require water supplies to be designed for peak flows that are not accounted for in CDPH costing analysis.⁸
2. California water supply planning (DWR Urban Water Management Plan) estimates water usage rates 50% higher on average than reflected in the CDPH costing analysis.⁹

It is good practice and current CDPH policy that community water systems maintain reliable water supplies to adequately meet their communities' health and safety needs under both routine and stressed conditions. As CDPH is well aware, the State's climate, demographics, and economy lead to significant seasonal and year-to-year variability in water use. As water systems

² California Department of Public Health. *Hexavalent Chromium MCL Initial Statement of Reasons*, Table 8.

³ Water Quality & Treatment Solutions. *Review of CDPH's Economic Analysis Supporting the Draft California MCL for Hexavalent Chromium in Drinking Water*. October, 2013.

⁴ National Drinking Water Advisory Council. *Recommendations of the National Drinking Water Advisory Council to U.S. EPA on Its National Small Systems Affordability Criteria*. July, 2003. p. xii.

⁵ Water Quality & Treatment Solutions. *Review of CDPH's Economic Analysis Supporting the Draft California MCL for Hexavalent Chromium in Drinking Water*. October, 2013. Table 3.

⁶ California Department of Public Health. *Small Water Systems Program Plan Monthly Update*. August, 2013. p.1.

⁷ Water Quality & Treatment Solutions. *Review of CDPH's Economic Analysis Supporting the Draft California MCL for Hexavalent Chromium in Drinking Water*. October, 2013, Table 3.

⁸ California Regulations Related to Drinking Water. Chapter 6, Article 2, Section 64554(b)(1). July, 2013.

⁹ California Department of Water Resources. *2010 Urban Water Management Plans*, 2012, Table 2.

are held accountable for maintaining an adequate supply, it is important that the Department's cost analysis for the proposed standard reflect treatment of the volume of water that systems are expected to be prepared to provide. When CDPH incorporates public comments and prepares a revised cost analysis to support its final standard, there is an important opportunity to utilize data on annual well production and peak month production data. Such production data are available. Every community water system in the state submits these data electronically to the Department each year. Using available production data would allow the Department to fully account for the State's water system design and reliability policy in this standard-setting process.¹⁰ Even using data from these annual reports may still underestimate the design capacity of impacted sources due to site-specific conditions. Site-specific design capacity is available in data sheets submitted by water systems to CDPH when the Department approves sources for use. CDPH is encouraged to use these available resources to improve the source characterization data used in the analysis supporting the Department's selection of a final Cr(VI) MCL.

When SB 351 was enacted in 2001, CDPH was tasked to prepare a MCL for Cr(VI) before a solid scientific foundation for such a rule was available.¹¹ After OEHHA adopted a final public health goal in 2011, CDPH gathered data on Cr(VI) to propose an MCL in a very limited amount of time. The existing time pressure was further compounded by litigation.¹² Despite these challenges, CDPH was able to prepare an analysis that is transparent and reproducible. Incorporating the improved analysis in the attached memoranda will provide a much stronger foundation for a defensible drinking water standard.

Even with these recommended improvements, the Department's analysis will not fully reflect the cost of Cr(VI) treatment. Additional site-specific information is important as well, including: the location of individual treatment sites, distances to residual disposal facilities, detailed water quality data, individual system credit worthiness, and other factors. The attached WQTS memorandum provides several individual case studies that illustrate how local considerations will lead to additional costs beyond those that can be captured in a generic statewide analysis. While such impacts may not be quantifiable for individual cases, CDPH should take into account that, for a large number of water systems, these local considerations will lead to significant costs beyond those reflected in the statewide analysis.

As noted earlier, water systems will work with dedication and diligence to comply with the final Cr(VI) standard. It is, however, unreasonable to promulgate a regulation without providing

¹⁰ State of California. Electronic Annual Reporting System, <http://drinc.ca.gov/ear/home.aspx>

¹¹ State of California. Health & Safety Code, Section 116365.5

¹² NRDC v. California Department of Public Health. Cal. Super. Ct., No. RG12643520

systems a realistic period of time to come into compliance. To illustrate this point, it is clear from the WQTS memorandum and related research conducted through Water Research Foundation Project #4450 that, because of varying water quality, many if not every source will have to undergo pilot testing of various treatment technologies to determine the most economical and appropriate treatment technology to meet the new MCL. This will take a considerable amount of time and additional expense.¹³ Under the federal Safe Drinking Water Act, water systems are provided three years to make changes necessary to achieve compliance with a new standard, and it is possible for the State to grant an additional two years for systems that need to make capital improvements. In finalizing the Cr(VI) standard, CDPH should follow the federal implementation model and afford water systems five years to come into compliance. CDPH is not under a statutory requirement to make its final Cr(VI) effective immediately upon promulgation.

Systems should not be put in the position of seeking to comply with a new Cr(VI) standard under an enforcement order. For many systems, identifying a community-specific, cost-effective compliance strategy will entail numerous steps that are complicated by an enforcement order and schedule, including: exploration of more cost-effective treatment solutions, negotiation of alternative sources of supply, obtaining community acceptance of associated water rate increases, requirements for investor-owned utilities to obtain approvals from the California Public Utilities Commission, and obtaining financing for capital improvements.

The attached memoranda demonstrate how making incorrect initial assumptions can lead to significantly underestimating the cost of treatment on a state-wide basis. The imposed rigidity of enforcement orders can likewise lead to unwise decisions. It is unreasonable for the State of California to spend more than a decade determining the appropriate level for a drinking water standard, and then hold local water systems and the communities they serve immediately liable for the lack of treatment.

In finalizing the Cr(VI) standard, the Department should provide clear direction to water systems that can serve as a sound basis for treatment and purchasing decisions. California Health and Safety Code Section 116365.5 directed CDPH to promulgate a standard for Cr(VI) in drinking water. The state legislature did not direct CDPH to promulgate a Cr(VI) standard and revise its regulation for total chromium. However, the proposed rule requires that some systems, based on total chromium levels, study the speciation of chromium in the distribution

¹³ Water Research Foundation. *Impact of Water Quality on Hexavalent Chromium Removal Efficiency and Cost*, <http://www.waterrf.org/resources/newsroom/PressReleases/WaterRF%20-%20hex%20chrome%20update%20press%20release%20FINAL.pdf>

system. It is not clear how the study is to be performed, what the purpose of the study is, and what the regulatory consequences are of any findings drawn from the study. The lack of clarity in this provision of the regulation makes it untenable. The Department should remove this provision from the final regulation or re-propose a revised, more clearly articulated requirement for additional review and comment prior to finalization.

CDPH's supporting documents indicate the proposed Cr(VI) standard will not have an impact on "individuals or businesses." This finding is inconsistent with the balance of the Department's supporting documents and is very misleading to the public and policy makers. The entire cost of the Cr(VI) standard will fall squarely on individual households and businesses that pay for water service. As a matter of law and sound practice, the capital and operating expenses required to support Cr(VI) treatment are funded through water rates. Consequently, individuals and businesses in approximately 600 water systems in California will be required to pay more than \$616 million each year. The impacts on individual rate payers in small communities will be higher than those in larger communities due to lack of economies of scale, with more than 432 systems serving fewer than 200 persons facing water rate increases which, by CDPH's analysis, are almost 10 percent of median household income.^{14,15} Similarly, the proposed standard would apply to nontransient, noncommunity water systems and as such will apply directly to individual businesses and non-profit organizations. The definition of a NTNC water system is one that serves the same people more than six months per year, but not year-round. Examples of NTNC water systems include schools, colleges, hospitals and manufacturing facilities with their own water supplies.

Local water rate impacts are a particularly challenging water policy issue in selecting a final Cr(VI) MCL, particularly if a primary policy driver is the assumption that industrial pollution is the primary source of Cr(VI). In this light, a very low MCL is argued as being the greatest opportunity for public good. The policy decision is complicated in that few of the systems impacted by a low Cr(VI) MCL face Cr(VI) occurrence due to industrial pollution. Rather, Cr(VI) is present due to the State's underlying geology.¹⁶ In the absence of a potentially responsible party to pay for low-level Cr(VI) treatment, policy makers should consider the state of health effects research on Cr(VI) and be absolutely comfortable that the final standard is appropriately conservative without placing unwarranted burdens on California's communities. Recent Cr(VI) health effects research has led the U.S. Environmental Protection Agency to re-assess the

¹⁴ Jacobs Engineering Group. *Technical Review of the Occurrence Analysis Used in the Draft Hexavalent Chromium MCL by California Department of Public Health (DPH-11-005)*. October, 2013.

¹⁵ Water Quality & Treatment Solutions. *Review of CDPH's Economic Analysis Supporting the Draft California MCL for Hexavalent Chromium in Drinking Water*. October, 2013.

¹⁶ California Department Of Public Health. Fact Sheet: Chromium-6 in Drinking Water. August, 2013.

potential health consequences of low-level, oral exposure to Cr(VI).¹⁷ While revisiting OEHHA's PHG is beyond the scope of this rulemaking, the Department should consider the household level impacts of its final MCL. The impacts of a low-level standard are particularly concerning in portions of California that are already economically disadvantaged. This clearly poses important policy questions: (1) does the final Cr(VI) MCL place an unfair burden on disadvantaged communities; and (2) does the final Cr(VI) MCL provide a net health benefit as water systems and households in these communities re-prioritize their water system and family spending to address this standard?

Policy makers should also consider the adequacy of the State's water supplies when finalizing the Cr(VI) standard. While the actual impact is difficult to predict with certainty, from the perspective of state water resource policy, the proposed MCL at 10 µg/L could precipitate a significant new and unforeseen pressure on surface water resources. Faced with tremendous costs for treating groundwater above the Cr(VI) MCL, a likely alternative for affected water systems is to turn to a new source, which in many cases will be already stressed surface water supplies, including the State Water Project and the Colorado River. California recognizes the close relationship between water quality and water supply issues and the critical importance of integrating planning and policy decisions. Of note is the 2013 Water Plan Update and the Administration's plan to transition the drinking water program to the State Water Resources Control Board.¹⁸ CDPH should incorporate a thorough analysis of the impacts the low-level Cr(VI) MCL may have on water sources.

We appreciate the Department's efforts to circulate supporting information and accept oral comment on the proposed rule. As our comments and the attached documents illustrate, we are very interested in the final Cr(VI) standard being based on the best available science and truly feasible to implement. Pertinent research efforts are still ongoing, and as water systems take steps to prepare for rule implementation, the water system and consulting engineering drinking water community is learning practical lessons that will impact rule implementation. We strongly support CDPH undertaking active outreach to and engagement with the drinking water community so that the Department has available the best possible information to support its final decision.

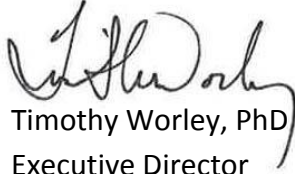
¹⁷ U.S. Environmental Protection Agency. Peer Review Workshop for EPA's Draft Toxicological Review of Hexavalent Chromium Reviewer Post-Meeting Comments, July, 2011.

¹⁸ California Department of Water Resources. *Public Review Draft of California Water Plan Update 2013*, October 2, 2013.

DPH-11-005
October 11, 2013
8 of 9

Thank you for the opportunity to comment on this rulemaking. If CDPH staff have any questions or need clarification of our comments please contact Tim Worley at (909) 291-2102 or tworley@ca-nv-awwa.org.

Sincerely,



Timothy Worley, PhD
Executive Director
California-Nevada Section, AWWA



Thomas W. Curtis
Deputy Director
American Water Works Association

cc: David Mazzera, CDPH

Attachments: Two (2)

