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October 11, 2013

Via E-Mail to: regulations@cdph.ca.gov

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

Subject: Proposed Chromium-6 Drinking Water
Maximum Contaminant Level (DPH-11-005)

Dear Comment Clerk:

The Western Coalition of Arid States (WESTCAS) is a coalition of approximately 125 water and wastewater districts, cities, towns, and professional organizations focused on water quality and water quantity issues in the States of Arizona, California, Colorado, Nevada, New Mexico, and Texas. Our mission is to work with Federal, State, and Regional water quality and quantity agencies to promote scientifically-sound laws, regulations, appropriations, and policies that protect public health and the environment in the arid West.

WESTCAS is deeply concerned that the proposed California drinking water maximum contaminant level (MCL) of 10 parts per billion (ppb) for chromium-6 (Cr-6) is not economically feasible to meet. Like arsenic, chromium occurs naturally in groundwater in many areas of the arid west including California and, excluding some isolated cases of industrial pollution, is the result of the erosion of natural sediments containing chromium. Also, like arsenic, advanced water treatment technologies required to remove Cr-6 from drinking water will be unaffordable to implement, particularly for smaller public water systems. Hundreds of water systems throughout the nation are still unable to comply with the revised arsenic MCL due to the high costs of implementing this treatment and similar noncompliance is certain to occur in California if the draft Cr-6 MCL of 10 ppb is promulgated.

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WESTCAS is pleased to submit the following technical comments on the proposed Cr-6 drinking water MCL:

1. Incomplete assessment of impacted sources. The number of drinking water sources impacted by the proposed regulation is a critical driver for estimating compliance costs. California Department of Public Health (CDPH) used a limited set of data representing less than 60% of the drinking water sources used in California and failed to use readily available total chromium data as a surrogate to provide a comprehensive estimate of the number of impacted sources. It is well known that chromium in groundwater occurs almost entirely as Cr-6.^{1,2} CDPH also failed to account for the uncertainty in predicting compliance with a MCL when using data sets consisting mostly of one or two test results. It is common practice to account for uncertainty when forecasting impacts from limited data sets by including factors of safety that ensure compliance. EPA used a threshold of 80% of the MCL for the Arsenic Rule and the Stage 2 Disinfectants/Disinfection By-products Rule. Water agencies often use a 20% safety factor when performing compliance planning for drinking water standards.

CDPH is urged to include results of historical total chromium monitoring and to incorporate a margin of safety based on 80% of the MCL to better estimate the number of impacted sources at each MCL option included in the subject regulation.

2. Incorrect estimation of water production. CDPH used a formula based on a water use rate (WUR) of 150 gallons per capita per day (gcpd) to predict the amount of water that would need to be treated for each impacted sources. The state receives annual reports electronically from public water systems that report the amount of water produced. CDPH is encouraged to use this readily available production data rather than attempting to predict water production based an incorrect and unsupported WUR.
3. Incorrect estimation of source design capacity. CDPH further compounds the effect of using incorrect information by using the WUR to estimate the design capacity of each impacted source by applying a peaking factor of 1.5. Even if the WUR was accurate, applying a peaking factor of 1.5 to the average water use in order to

¹ Frey, M.M., Seidel, C.J., Edwards, M., Parks, J.L., McNeil, L., "Occurrence Survey of Boron and Hexavalent Chromium," American Water Works Association Research Foundation, Denver, CO, 2004.

² Seidel, C. J., and Corwin, C. J. (2013). "Total Chromium and Hexavalent Chromium Occurrence Analysis." *Journal of American Water Works Association*, 105(6) 37-38.

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estimate source design capacity does not meet CDPH's waterworks standards required to provide a reliable water supply. The effect of this compounded error is significant because the source design capacity is the most important value used to estimate the capital cost for treating each impacted source. CDPH should have used the source design capacity that is reported in the well data sheets that are submitted to CDPH in the permit amendment application. This parameter is so important for determining the capital costs of the treatment process that CDPH is urged to obtain the actual design capacity for each impacted source to develop compliance costs for each MCL option.

4. Failure to include costs for land and buildings. The capital cost models that CDPH used to estimate compliance costs did not include costs for land and buildings needed to implement treatment to comply with the draft MCL. Unlike facilities constructed for the City of Glendale that were the basis for CDPH's capital cost models, impacted sources throughout the state are found in residential areas where land is limited and uncovered treatment facilities would not be allowed by local residents or land use agencies. CDPH used an incorrect assumption to believe unneeded land is present to construct treatment facilities at all impacted well sites. This is certainly not accurate and it implies that the land needed for treatment facilities is "free" and has no value. While some well sites may have enough open space to construct these facilities, the land is not valueless. Open space is critical for installing replacement wells, performing operation and maintenance activities and even providing buffer space between water facilities and adjacent structures. Land used for treatment facilities is land that is no longer available to meet these other existing or future needs and will need to be purchased.

Likewise, the residential settings where many California well sites are located will demand the installation of buildings to cover treatment facilities that comply with local building codes and blend-in with the community. This is no minor cost and excluding both land and building costs is a significant oversight that acts to further underestimate the compliance costs of the draft MCL.

5. Failure to account for economic impact to individuals and businesses and risk trade-off. CDPH's Cost Estimating Methodology and Economic and Fiscal Impact Statement conclude that the draft Cr-6 MCL will have no economic impact to businesses or individuals. This conclusion is inaccurate. The costs to comply with the draft MCL will absolutely be passed on to individuals and businesses through rate increases. The demand for grants is great and these funds are allocated based on priority, areas with acute health risks are first in line and have needs that far exceed

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available funds. The same applies to drinking water state revolving funds, which, if available for something like Cr-6 with theoretical chronic risks of lower priority, would still result in rate increases to individuals and businesses.

Rates for some impacted water systems are expected to more than double to comply with the draft MCL. This increase will be unaffordable for many water customers and those customers will have fewer resources to pay for items that help lower their health risk including doctor visits and preventative health care. This risk trade-off is not addressed by the draft MCL.

CDPH is urged to fully account for the economic impact and risk trade-off that the draft MCL would have on individuals and businesses.

6. Failure to provide affordable compliance options. Table 8 of CDPH's Initial Statements of Reasons for the draft MCL clearly shows that the cost per customer to many public water agencies will not be affordable. This is most evident for customers served by smaller agencies where the average annual cost per customer is estimated at \$5,630 and far exceeds any reasonable affordability criteria, which are usually at or close to 2% of the median household income (MHI). CDPH's estimate of 65 sources impacted in the smallest system category serving less than 200 service connections increases to 545 sources when complete records discussed in item 1 above are included. Even without adjusting CDPH's cost estimates for these sources, there will be tens of thousands of customers in these small water systems that will not have affordable water.

Point-of-use and point-of-entry (POU/POE) water treatment is an effective process for removing Cr-6 from drinking water and has been identified as an affordable alternative to centralized treatment for long-term compliance with drinking water standards in other arid west states. CDPH has not provided a regulatory environment to allow POU/POE as a long-term compliance option for public water systems. Recent changes to sections 64417-64420, Title 22, California Code of Regulations, restrict POU/POE options to temporary use until centralized treatment can be installed within the allowed 3-year period. Without a feasible alternative to centralized treatment, many water systems will have no affordable way to comply with the draft MCL and will face certain noncompliance much like the hundreds of water systems across the nation that are still unable to comply with the revised drinking water standard for arsenic.

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CDPH needs to incorporate revisions to existing state provisions governing POU/POE to ensure this treatment process is provided as a long-term compliance option for any public water system able to determine that POU/POE is the only feasible, affordable approach to ensure compliance with the final Cr-6 MCL.

7. Failure to provide time to comply. WESTCAS understands that CDPH intends to make the draft Cr-6 MCL effective immediately following its adoption. This is not consistent with procedures used by EPA to provide public water systems time to implement corrective action to install facilities needed to comply with new drinking water standards. EPA typically delays the effective date of these new standards 3-years and provides states the ability to extend the effective date 2 additional years when capital facilities are needed to meet the new standard. It would be unreasonable to make the draft MCL effective without providing a realistic period of time to come into compliance with final Cr-6 MCL. CDPH is strongly urged to ensure the proposed regulation includes provisions that provide public water systems adequate time to implement capital improvements needed to comply with the final Cr-6 MCL and avoid certain noncompliance.
8. Failure to include costs for pilot testing. Once the final Cr-6 MCL is adopted, public water systems with impacted sources throughout the state will need to perform pilot testing to identify the best available treatment technology for reducing Cr-6 levels in drinking water. One of the most important lessons learned from implementing the arsenic rule is that variable water quality conditions for individual sources can greatly influence treatment technology decisions. There were unfortunate cases where technologies were not pilot tested and resulted in the installation of treatment technologies that were either ineffective or infeasible to operate. In addition to providing time to perform this pilot testing, CDPH is urged to include the costs of performing this pilot testing and other related compliance planning needed to meet the final Cr-6 MCL.
9. Failure to provide clear provisions in Section 64432(p). CDPH is required to adopt a Cr-6 drinking water standard but state lawmakers did not direct CDPH to revise its regulation for total chromium. The subject regulation requires that some systems, based on total chromium levels, study the speciation of chromium in the distribution 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 infeasible to implement. CDPH is encouraged to either remove this provision from the final regulation or re-propose a revised, more clearly articulated requirement for additional review and comment prior to adopting the final Cr-6 MCL.

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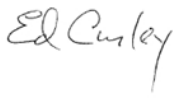
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10. Failure to account for impact to water resources. California water resources are the subject of great concern. While difficult to predict with certainty, it would be reasonable to anticipate that the draft Cr-6 MCL will drive public water systems that currently depend on groundwater to explore the use of alternative water supplies which include the State Water Project and Colorado River. Therefore, the draft Cr-6 MCL of 10 ppb could increase demands for these strained surface water resources and have an impact throughout the arid west. CDPH should include a comprehensive assessment of the impact that the draft Cr-6 MCL may have on western water resources.

11. Failure to balance costs and benefits. CDPH estimates 12 theoretical cancer cases will be avoided statewide each year as a result of implementing the draft MCL. Of course, this assumes public water systems are actually able to implement the treatment needed to comply with the draft Cr-6 MCL, which is highly doubtful considering ongoing noncompliance with the arsenic rule and the much greater cost impacts associated with the subject regulation. Once CDPH's estimated compliance costs are adjusted for the incomplete information and incorrect assumptions discussed above it is estimated that the compliance costs will be about four-times higher than the estimates used to support the draft MCL. Even before this adjustment is made, cost benefit ratios ranging from \$11 million to \$122 million per theoretical cancer case avoided included in the Initial Statements of Reason for the draft MCL are not justified. After the costs are adjusted, these cost benefit ratios will increase significantly and clearly demonstrate the unbalanced nature of the proposed regulation.

WESTCAS supports regulations that ensure safe drinking water for communities and provide for reasonable health risk reduction benefits. However, added protection must be compared to real economic impacts. CDPH's attempt to balance the costs and benefits of the proposed Cr-6 MCL is grossly deficient and needs to be corrected to avoid an unnecessary economic hardship for Californians. CDPH is urged to perform a comprehensive reassessment of the economic feasibility to comply with each of the 7 MCL options included in the Initial Statement of Reasons for the proposed regulation. Following this reassessment, a revised proposed regulation needs to be prepared and released for additional public comment with a full 45-day comment period.

Sincerely,



Ed Curley, President

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