Central Valley Clean Water Association
Representing Over Fifty Wastewater Agencies

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Subject: **Comments on *White Paper Discussion on: Economic Feasibility Analysis in Consideration of a Hexavalent Chromium MCL* dated February 2020**

CVCWA appreciates the opportunity to comment on this document and to participate as a stakeholder providing input into the process of adopting a maximum contaminate level (MCL) for Hexavalent Chromium. CVCWA is a non-profit association of public agencies located within the Central Valley region that provide wastewater collection, treatment, and water recycling services to millions of Central Valley residents and businesses. CVCWA members have a strong commitment to the protection of municipal and domestic beneficial uses in Central Valley waters. To provide input to the Division of Drinking Water in its evaluation of the economic feasibility of the proposed MCL, CVCWA offers the following comments and recommendations.

CVCWA has a keen interest in the State Water Board's process to develop MCLs, because MCLs automatically become enforceable water quality objectives (WQOs) in the Central Valley based on provisions in the Sacramento-San Joaquin and Tulare Lake Basin Plans. WQOs are drivers for effluent limits established in NPDES permits and Waste Discharge Requirements (WDRs). In general, changes to MCLs and the effluent limits derived from those MCLs can have significant compliance cost ramifications both to water and to wastewater treatment utilities, especially in small communities. Given this fact, CVCWA plans to participate in this process and other MCL development processes in the future.

In this letter, CVCWA's comments focus on the specifics of the Hexavalent Chromium (CrVI) case and address the contents of the White Paper[1]. In a larger sense, these comments also pertain to the structure and content of the economic feasibility analysis and the decision-making process as it may be applied in the consideration of future proposed MCLs.

CVCWA's comments are focused on the following areas:

- Does the White Paper clearly articulate the State Water Board's approach to the economic feasibility evaluation?
- What factors should be addressed in assessing economic feasibility?
- How will compliance and economic impacts on wastewater systems be taken into account?

BACKGROUND

In 2014, the Department of Public Health adopted an MCL for CrVI of 10 µg/L (parts per billion, or ppb). This MCL was ten times lower than the federal MCL for total chromium (100 ppb) that was established under the federal Safe Drinking Water Act and five times lower than the current California MCL for total chromium (50 ug/l).

In establishing MCLs, the State of California (the State Water Board) has specific obligations under the California Health and Safety Code. In 2017, a Sacramento County Superior Court invalidated the 2014 CrVI MCL for the failure of the State of California to meet those obligations.

Section 116365 of the Health and Safety Code requires the State Water Board to set MCLs "at a level that is as close as feasible to the corresponding public health goal placing primary emphasis on the protection of public health . . . to the extent technologically and economically feasible . . . ."

Under Section 116365, Public Health Goals (PHGs) are to be developed by the Office of Environmental Health Hazard Assessment (OEHHA) using a risk assessment methodology. PHGs are defined as an estimate of the level of the contaminant in drinking water that is not anticipated to cause or contribute to adverse health effects, or that does not pose any significant risk to health. PHGs are subject to a 45-day public review and must undergo external peer review.

In setting MCLs, the State Water Board must consider the OEHHA PHG, the primary drinking water standards established by the USEPA, and the ". . . technological and economic feasibility of compliance with proposed standards . . . ." This includes consideration of the ability to reliably measure and report concentrations of the constituent of interest in a drinking water matrix, a value known as the "detection level for the purposes of reporting" (DLR). The State Water Board has determined the DLR for CrVI to be 1 ug/l.

[1] California State Water Resources Control Board (2020). White Paper Discussion On: *Economic Feasibility Analysis in Consideration of a Hexavalent Chromium MCL.* February 2020.

For the purposes of determining economic feasibility, the State Water Board must consider the cost of compliance to:

- Public water systems
- Customers
- Other affected parties

Factors to be considered by the State Water Board include cost per customer and the aggregate cost.

Additionally, under the California Safe Drinking Water Act (HSC Section 116270), the following are required:

- Every resident of California has the right to pure and safe drinking water . . . the water delivered by public water systems shall at all times be pure, wholesome, and potable;
- Concentrations of toxic chemicals that may cause cancer, birth defects, or other chronic diseases should be reduced to the lowest level feasible; and
- Primary drinking water standards in California should be at least as stringent as those established under the federal Safe Drinking Water Act.

A table in the White Paper provides estimated Annual Cost per Service Connection (dollars per year) for a range of possible MCL values. Compliance with the proposed CrVI MCL (10 µg/L) will result in a $5,630-per-connection annual cost for users of small systems (less than 200 service connections), $857 for systems with 200 to 999 service connections, $326 for systems with 1,000 to 10,000 connections, and $64 for systems greater than 10,000 connections – based on information derived from the 2014 California Department of Public Health (CDPH) Initial Statement of Reasons (ISOR).

CVCWA's comments and recommendations provided below are intended to assist the State Water Board in meeting its legal obligations and to point out specific information which is needed to provide more complete understanding and transparency of economic feasibility in this challenging process.

1. Does the White Paper Clearly Articulate the State Water Board's Approach to the Economic Feasibility Evaluation Consistent With Direction from the Sacramento County Superior Court?

As described in the Health and Safety Code, the process for setting MCLs results in a system that is, appropriately, strongly biased toward public health protection. On the other hand, as the Sacramento County Superior Court emphasized, setting an MCL "involves a **balancing** of public health concerns with questions of technological feasibility and cost." The White Paper notes that the "State Water Board . . . acknowledges the need to consider costs of regulatory compliance with the benefits achieved."

The challenge is to balance the emphasis on stringent MCLs with the complex realities of both the economic and health impacts of compliance – in particular, at the customer/household level in small systems. As noted in California-based research by Christian-Smith, et al., 2013, it is important to focus on impacts at the household level, since analysis at the statewide or even water system level can obscure the actual impact to customers. These realities are identified, but not resolved, in the current White Paper. In fact, the White Paper states that a "cost-benefit approach is not feasible." This is because the State Water Board states that there is an "inability to accurately account for and monetize the benefits and impacts of selecting one MCL versus another." The White Paper alleges that while treatment costs can be monetized and calculated at the household or aggregate levels, the difficulties in monetizing health benefits derived from an MCL causes the state to rely on a qualitative assessment of potential health effects related to the adoption of a CrVI MCL.

The White Paper suggests various approaches which would not address the economic feasibility of the proposed MCL from the standpoint of small systems. Such approaches would not be responsive to the direction from the court, which registered its concern regarding "economic feasibility for small water systems and their users." The court held that the state cannot simply ignore the economic feasibility of the regulation on a small segment of the population that will bear disproportionately higher costs. The court also opined that the state "must pay particular attention to small water systems and their users."

In summary, while the White Paper describes challenges faced by the State Water Board in considering economic feasibility during the development of MCLs, it does not provide clarity on the approach that the State Water Board will follow. It points to a multi-faceted, weight-of-evidence approach that provides flexibility but little definition or consistency. Further, the White Paper suggests some actions by the State Water Board that would be inconsistent with the direction provided by the court.

2. What Factors Should Be Addressed in Assessing Economic Feasibility?

To better respond to the court mandate, it is recommended that the following be addressed to consistently and meaningfully assess economic feasibility as part of the MCL policy determination:

- The State Water Board should define a consistent structure and clearly identify required elements for the determination of economic feasibility. The structure should identify important issues that will be addressed in the CrVI MCL evaluation and future MCL evaluations. CVCWA recommends that the following factors be addressed:

    - In addition to the consideration of the health risks associated with CrVI concentrations in drinking water, the economic feasibility portion of the MCL development process should consider the indirect health risks associated with the economic impacts of increased water rates, especially in communities with populations at, or near, poverty levels. This evaluation should apply to households served by both large and small public water systems. Increases in utility rates affect all households but are especially difficult for low-income households that already struggle to pay for the essential costs of living. A modest increase in a monthly utility bill for

electricity, water, or wastewater treatment further taps household resources at lower income levels that are already strained by paying for housing, food, health care, clothing, transportation, existing utility costs, and other essential goods and services. Low-income households (defined as 25th percentile of the national median household income (Gingerich et al., 2017); 20th percentile household income (Teodoro, 2018); or 200 percent of federal poverty level (SWRCB, 2020), to provide three examples) do not possess the financial flexibility to accommodate even small changes in household expenditures, and are forced to make tradeoffs in paying for their basic needs. These tradeoffs in paying for essential goods and services have been well-studied for U.S. households at or near the federal poverty line with respect to energy costs (Hernandez, 2016). Hernandez (2016) describes the "heat or eat" dilemma wherein low-income households are forced to choose between food and energy, oftentimes trading one for the other. The State Water Board's recent recommendation for development of a statewide Low-Income Water Rate Assistance Program echoes the problem that low-income households face when deciding how to pay bills, which can result in "skipping meals and going hungry, delaying or avoiding medical treatment, risking eviction, or facing potential disconnection for electric, gas, or water services." (SWRCB, 2020). These tradeoffs made by low-income households can have negative health impacts and jeopardize health and welfare (Hernandez, 2016; SWRCB, 2020). Researchers have found that economic hardships and poor living conditions can contribute to chronic stress (Evans and Kantrowitz, 2002; McEwen, 1998) and trigger anxiety and depression (Hernandez, 2016). The collateral health impacts of poverty that are exacerbated by the currently unaffordable costs of essential goods and services at lower income levels need to be considered and appropriately addressed by the state when adopting drinking water standards that disproportionately affect low-income households.

- The State Water Board should directly address the so-called "small system dilemma"; i.e., the need to balance health protection for users of small systems with the need to have affordable solutions for those small systems. The White Paper states that "[m]any small public water systems already struggle with compliance and routine maintenance such that any new or more stringent drinking water standards will be difficult for these systems to comply with. Current water rates are difficult for disadvantaged populations to bear . . . in many cases, these rates barely cover basic operational needs and do not address . . . infrastructure maintenance and replacement."

- As part of this evaluation, the State Water Board must consider the effectiveness and sustainability of small-system treatment solutions and impacts to small communities and small public systems, both disadvantaged and non-disadvantaged. The analysis must not mask the impacts on small communities by considering a weighted average annual cost approach or by otherwise ignoring or minimizing actual impacts to small systems and their users. Before relying on grants and loans to ameliorate the significant impact

of the proposed MCL on many small-system households, the State Water Board must perform a complete analysis of the capacity of available funding programs to meet the needs of all small systems to entirely offset disproportionate cost burdens on these systems. If grants are integral to resolving affordability problems, the evaluation must address whether grant funding sources are adequate to cover all impacted small systems.

- It is our understanding that the State Water Board intends to perform an updated compliance assessment as part of the CrVI MCL evaluation. A robust understanding of the compliance impacts of the proposed CrVI MCL for public water systems of all sizes is needed. As a starting point for the evaluation of economic feasibility, the State Water Board must have sound information regarding actual water system data to properly identify and address compliance issues and associated treatment costs.

- It is our understanding that the State Water Board intends to perform an update regarding drinking water treatment technologies as part of the CrVI MCL evaluation. Treatment cost estimates must be verified. A thorough assessment of alternatives to the use of best available technology (BAT) by small communities should be performed. This assessment should include capital and operational and maintenance costs of alternatives to BAT (e.g., Point of Use systems), analysis of reliability, sustainability, replacement costs, and long-term effectiveness.

- The evaluation of economic feasibility must address the affordability of treatment solutions. As the court pointed out, "it is difficult to conceive of a definition of economic feasibility that does not at least consider affordability." The Final SOR in support of the prior MCL for CrVI recognized that ". . . for small systems, compliance with the proposed MCL . . . may not be affordable." Relevant studies have examined different approaches to the consideration of affordability (Christian-Smith et al., 2013; Gingerich et al., 2017), which should be evaluated for use by the State Water Board. In the consideration of affordability, it is suggested that the following treatment cost scenarios (to achieve MCL compliance) should be considered for evaluation at the household level:

    - at current water rates;

    - at current aggregate rates for all utility services (water, wastewater, stormwater, power, garbage);

    - at current aggregate rates plus added costs to address the existing need for replacement and reliability upgrades; and

    - at current aggregate rates, plus replacement and reliability upgrade costs, plus added costs for CrVI treatment under proposed MCL.

- The long-term, cumulative compliance cost of multiple new MCLs (e.g. CrVI, perchlorate, PFOS/PFOA) must be compared against the total financial capacity

of grant funding sources. Additionally, these long-term considerations should address the affordability of cumulative rate increases at the household level. It may be advantageous for the State Water Board to think more holistically regarding the ultimate management response to the CrVI MCL and future MCLs. One approach would be to perform an overall assessment of costs and benefits of the full range of technological solutions. On the one hand, this information could be used to evaluate the cross-cutting benefits of various treatment alternatives in terms of improved water quality (i.e., treatment for one constituent may resolve compliance issues for other constituents). On the other hand, this information could be used to evaluate the overall cost impacts and affordability of implementing different technological solutions across the state. In this evaluation, the weighted average cost approach could be an effective tool to assess the costs to all Californians when costs for small system solutions are spread through a grant program.

- To properly balance health risks, it is essential to understand and be transparent regarding the scientific basis, health risks, and uncertainties embodied in the PHG as compared to the inherent trade-offs in economic effects and health risks associated with increased water rates. In addition, new scientific evidence regarding the connection of CrVI to stomach cancer (e.g., Suh, Mina; Wikoff, D.; Lipworth, L.; Goodman, M; Fitch, S; Mittal, L; Ring, C; and Proctor, D. (2019) Hexavalent Chromium and Stomach Cancer: A Systematic Review and Meta-Analysis, Critical Reviews in Toxicology. 49:2, 149-150.DOI: 10.1080/10408444.2019.1578730) should be recognized and may warrant OEHHA review of its PHG determination to confirm its relevance based on the best available scientific information.

3. How Will Compliance and Economic Impacts on Wastewater Systems Be Taken Into Account?

As stated previously, in the Central Valley, and in some other regions in California, MCLs are automatically incorporated by reference into basin plans as enforceable WQOs. As such, revised MCLs raise issues regarding the feasibility and cost of compliance with effluent limitations in NPDES permits and WDRs. To the extent that compliance problems may arise, this can result in additional treatment requirements and associated cost consequences, which will add to the local burden on utility user charges. It is important that these costs be included in the overall evaluation of economic feasibility in the MCL development process. The specific language that the Central Valley Regional Water Quality Control Board has adopted in its two Water Quality Control Plans is as follows:

> At a minimum, water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of Title 22 of the California Code of Regulations, which are incorporated by reference into this plan: Tables 64431-A (Inorganic Chemicals) . . . of Section 64431 . . . . *This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect.*

(See Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin, 5th ed. (May 2018), p. 3-3 – 3-4, emphasis added; Water Quality Control Plan for the Tulare Lake Basin, 3rd Ed. (May 2018), p. 3-4, emphasis added.)

In establishing WQOs, the California Water Code requires regional water quality control boards to ensure reasonable protection of beneficial uses and requires consideration of the following factors:

a. Past, present, and probable future beneficial uses of water.

b. Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.

c. Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.

d. Economic considerations.

e. The need for developing housing within the region.

f. The need to develop and use recycled water.

(Wat. Code, § 13241.)

We understand that the Division of Drinking Water may not be the appropriate unit within the Water Boards to perform the Water Code Section 13241 analysis. But, it *is* the Water Boards' duty to do so prior to adoption of any new MCL – in this case for CrVI. Thus, the Division of Drinking Water's consideration of the technological and economic feasibility of any MCL for drinking water providers should be accompanied by a parallel analysis by the Division of Water Quality or the Central Valley Regional Board that takes into consideration the requirements of Water Code Section 13241. Further, given the aggregate affect of both water and wastewater rate increases at the household level, we advocate that the "economic considerations" that are made in addressing Water Code Section 13241 requirements be consistent with the approach outlined above to address the economic feasibility of a proposed MCL.

APPROACHES FROM LITERATURE

As noted above, CVCWA recommends the consideration of methods described in the literature, including but not limited to the following sources:

- Assessing Water Affordability: A Pilot Study of Two Regions of California (Christian-Smith et al., 2013). This paper provides an assessment of economic effects on both large and small communities. It demonstrates that such effects shift dramatically as the analysis changes from a water system-level analysis to a household-level analysis. The household level-analysis better elucidates the magnitude of economic impact on the most vulnerable households.

- Is the Arsenic Rule Affordable? (Gingerich et al., 2017). This paper is referenced in the White Paper. It states that this type of economic analysis

should account for the costs to customers associated with multiple water quality regulations. The paper also stresses the need to evaluate drinking water affordability using a methodology that identifies the economic impacts of increased utility rates at the household level among disadvantaged communities.

- Measuring Household Affordability for Water and Sewer Utilities (Teodoro, 2018). This paper also emphasizes the need to address the affordability of current and future utility costs by focusing on impacts to low-income households when developing not only utility rates, but rate assistance programs, for these households. The author also warns against generalizing utility affordability among different communities of the same size in the same region, as each community may very well have different abilities to pay for current and future utility costs. Teodoro is recognized in the White Paper as a national expert on water affordability.

COMMENTS ON SPECIFIC WHITE PAPER ASSERTIONS

Page 4 and page 7, footnote 7: The White Paper alleges that the use of alternative (non-BAT) treatment approaches by small communities will result in a lowering of costs (as compared to costs associated with application of BAT in small systems). This statement is not properly supported by information in the White Paper. This issue should be thoroughly evaluated in terms of cost and sustainability and the White Paper should be modified to reflect the outcome.

Page 9: The White Paper states that treatment systems that reduce concentrations below MCLs provide an increase in risk-reduction benefits. This statement is misleading, since MCLs are established at levels which already avoid significant risk; further reductions below MCL levels inherently create an incrementally small change in risk.

Page 9: The White Paper draws a distinction between affordability and economic feasibility. Affordability is said to refer to the ability of individual households to pay water bills, while economic feasibility refers to the ability of the general state population served by public systems to pay for compliance with drinking water standards. CVCWA disagrees with this distinction. As advocated above, CVCWA believes that affordability is a fundamental and essential element of the economic feasibility evaluation that the State Water Board should perform. This is implicit in the court's focus on small systems *and their users*.

We thank you again for this opportunity to provide comments on the draft White Paper. Please contact me if you have any questions regarding the above information.

Sincerely,

Debbie Webster

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