

# Proposed Hexavalent Chromium Maximum Contaminant Level

Regulation Adoption and Certification of Final EIR

April 17, 2024, Item 6



CALIFORNIA

Water Boards

Division of Drinking Water

# Proposed Resolution

- Adoption of hexavalent chromium regulations, including:
  - Maximum Contaminant Level (MCL): 10 µg/L
  - Detection Limit for Purposes of Reporting (DLR): 0.1 µg/L
  - Analytical Methods: EPA Methods 218.6 and 218.7
  - Best Available Technologies (BAT): ion exchange, reduction/coagulation/filtration (RCF), reverse osmosis
  - Public Notification and Consumer Confidence Report Modifications
  - Compliance Schedule: size-based, 2 to 4 years
  - Compliance and Operations Plans Requirements
- Certification of programmatic Environmental Impact Report (EIR), and adoption of findings and statement of overriding considerations

# Rulemaking Timeline

<i>DATE</i>	<i>EVENT</i>
April 2020 to April 2022	Public Workshops: <ul style="list-style-type: none"> <li>• White paper on economic feasibility</li> <li>• Draft treatment costs</li> <li>• CEQA scoping</li> <li>• Administrative draft</li> </ul>
16 June 2023	Notice of Availability of EIR; Notice of Proposed Rulemaking published; comments due 18 August 2023
2 August 2023	Administrative Procedure Act and CEQA public hearing
22 November 2023	Notice of Public Availability of Changes; comments due 15 December 2023
31 January 2024	Notice of Public Availability of Additional Documents Relied Upon; comment deadline 4 March 2024
<b>17 April 2024</b>	<b>Adoption consideration</b>
<i>15 June 2024</i>	<i>Deadline for rulemaking record submission to Office of Administrative Law</i>

# Applicability

- California public water systems (PWS) are subject to regulations under the California Safe Drinking Water Act.
- Health and Safety Code (HSC) section 116555 requires any person owning a PWS to ensure compliance with primary drinking water standards.
- Proposed maximum contaminant level and pertinent monitoring and reporting requirements constitute primary drinking water standard [[HSC 116275](#)].
- Proposed regulations to be added to 22 CCR, Div. 4, Ch. 15: "Domestic Water Quality and Monitoring Regulations"
- The Human Right to Water has been considered.

# Maximum Contaminant Level (MCL)

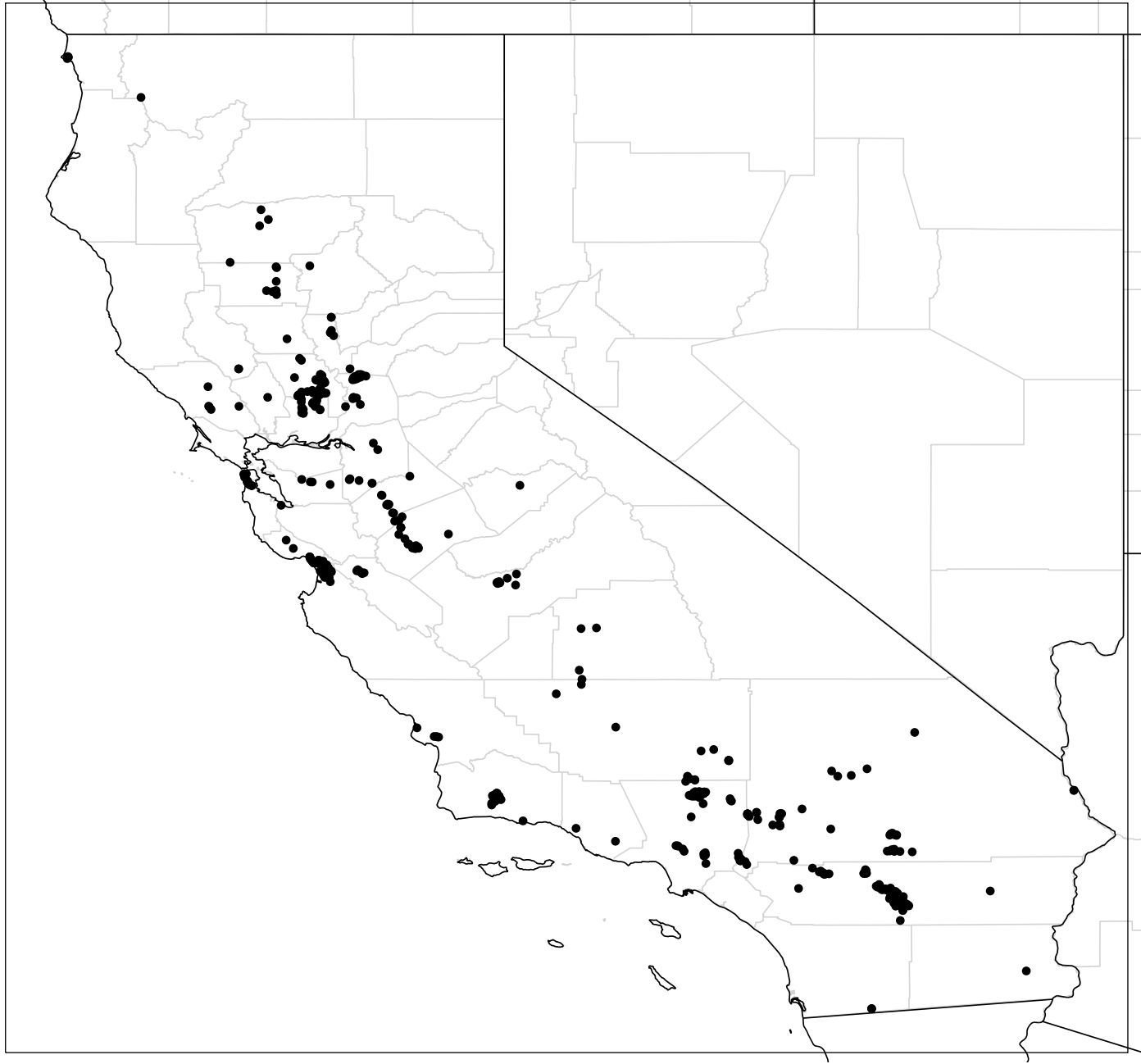
- Standard limiting concentration in drinking water (maximum permissible level)
- Based on Health and Safety Code section 116365:

*MCL must be set “at a level that is technologically and economically feasible to the corresponding public health goal (PHG) ...”*

- Proposed hexavalent chromium MCL:

**10 micrograms per liter (µg/L)**

Sources That Exceed 10 ug/L Hexavalent Chromium



# Detection Limit for Purposes of Reporting (DLR)

- Designated minimum levels at or above which analytical finding must be reported
- Provides consistent definition of “non-detect”
- Proposed hexavalent chromium DLR:

**0.1 µg/L**

- Proposed analytical methods:

**EPA 218.6 and EPA 218.7**

# Best Available Technology (BAT)

- BAT are treatment technologies that have been proven effective under full-scale field applications.
- BAT are adopted to identify which treatment technologies are currently available to consistently and reliably remove the contaminant to a concentration below the proposed MCL.
- BAT designation does not preclude permitting of alternative technologies capable of treating for hexavalent chromium.
- Proposed BAT:
  - **Ion exchange**
  - **Reduction/coagulation/filtration (RCF)**
  - **Reverse osmosis**



# MCL Compliance Schedule

System Size	Regulatory Compliance Date	Expected Compliance Date
10,000 or more service connections	two years after regulation takes effect	1 October 2026
1,000 to 9,999 service connections	three years after regulation takes effect	1 October 2027
Fewer than 1,000 service connections	four years after regulation takes effect	1 October 2028

# Compliance Plans

- PWS exceeding the MCL before compliance date must submit compliance plan.
- Compliance Plans are proposed to ensure that the additional time granted by the compliance schedule will be spent effectively.
- Compliance Plans must:
  - Be submitted within 90 days of MCL exceedance
  - Include proposed method of compliance
  - Include projected dates for plan submission and treatment construction
  - If proposing treatment, must include pilot study and projected completion date of operations plan
  - Be implemented by PWS once approved
- Compliance Plans may be amended.

# Operations Plan

- Required for PWS proposing a new or modified treatment process
- Necessary to safely operate a treatment plant
- Must include the following, if applicable:
  - Performance monitoring program
  - Unit process equipment maintenance program
  - How and when each unit process is operated
  - Procedures used to determine chemical dose rates
  - Reliability features
  - Treatment media inspection program
- Must be approved by DDW before treated water is served

# Consumer Confidence Report (CCR)

- Annual drinking water report to consumers
- Proposed health effects language:

*“Some people who drink water containing hexavalent chromium in excess of the MCL over many years may have an increased risk of getting cancer.”*
- Proposed language for exceedances prior to compliance date:

*“Chromium (hexavalent) was detected at levels that exceed the chromium (hexavalent) MCL. While a water system of our size is not considered in violation of the chromium (hexavalent) MCL until [insert applicable compliance date], we are working to address this exceedance and ensure timely compliance with the MCL. Specifically, we are [insert actions taken and planned to ensure compliance by applicable compliance date].”*

# Public Notice – Typical Contaminant Origins

- Used in consumer confidence reports and public notices
- Proposed Typical Contaminant Origins Language:

*“Erosion of natural deposits; transformation of naturally occurring trivalent chromium to hexavalent chromium by natural processes and human activities such as discharges from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities.”*

## Public Notice – Tier 2

- Provides consumers with notification of violations based on level of potential public health impact:
  - Tier 1: acute health effects; notification required within 24 hours
  - Tier 2: non-acute health effects, persistent violations; notification required within 30 days
  - Tier 3: monitoring, reporting, recordkeeping; notification required within 1 year
- **Tier 2 notification** for MCL exceedances occurring prior to applicable compliance date
- Would ensure compliance schedule does not result in consumer notification delay

# Existing Requirements

- Initial sampling must start within 6 months of the effective date of the regulation.
  - Sampling from previous 2 years may be substituted if performed in accordance with 22 CCR § 64432.
- Permit amendments are required in some cases, including additions or changes in treatment [[22 CCR § 64556](#)].

# Programmatic Environmental Impact Report (EIR)

- Impacts of reasonably foreseeable means of compliance
- Cannot quantify impacts associated with implementation of any specific project because too speculative to assume sizes, types, and locations of potential compliance projects
- Recognizes potential for environmental impacts
- Identifies potential mitigation that lead or responsible agencies can require to avoid or reduce impacts
- Takes conservative approach and finds most impacts significant and unavoidable



# Implementation Timeline

<i><b>DATE</b></i>	<i><b>EVENT</b></i>
<i>17 April 2024</i>	<i>Adoption</i>
<i>1 October 2024</i>	<i>Expected effective date of proposed MCL</i>
<i>October 2024 – March 2025</i>	<i>Initial sampling</i>
<i>Starting January 2025</i>	<i>Compliance plans due within 90 days of MCL exceedances (may require up to 4 quarters of sampling to determine)</i>
<i>Within 30 days of an exceedance</i>	<i>First Tier 2 public notification under new requirements</i>
<i>July 2025 or 2026 (depending on timing of initial sampling)</i>	<i>First Consumer Confidence Report with new requirements</i>
<i>2026 - 2028</i>	<i>PWS compliance dates</i>

# Total Comments Received

Total Commenters: 89

Total Comment Letters: 61

Total Speakers: 38

## MCL Concentration – Higher

MCL should be set at a level that is higher, less costly, and less likely to result in litigation (25, 30, and 50 ug/L proposed).

- *The State Water Board is statutorily mandated to adopt an MCL that is as close to the public health goal as is technologically and economically feasible (HSC 116365).*

## MCL Concentration – Lower

Commenters would like the MCL to be revised to a more health-protective level (0.02, 1, and 5 ug/L were proposed), and believe the MCL should prioritize achieving a more health-protective MCL rather than highlighting challenges of compliance (undue emphasis was placed on costs instead of on the benefits to public health).

- *The MCL has been set as close to the PHG as is currently technologically and economically feasible.*
- *The MCL does not preclude water systems from achieving lower levels as desired by their customers.*

# Compliance Plan

Commenters state that compliance by the applicable compliance date is infeasible for some or most PWS.

- *Removed Compliance Plan requirement that a PWS describe how it would comply by the applicable compliance deadline*

## Consumer Notification – Increase

Additional notification of MCL exceedances should be provided to consumers during the compliance period.

- *Tier 2 public notification for MCL exceedances before the applicable compliance date has been added to proposed regulation.*

## Consumer Notification – Increase

Exceedance notifications should be extended to customers and the general public via city and county website portals.

- *While this cannot be accommodated at this time, DDW may be able to explore this concept as part of revisions to the Consumer Confidence Report in a future rulemaking.*

## Consumer Notification – Oppose Tier 2

State Water Board should ensure that PWS are actively communicating with the public while they work to achieve compliance via a required Communication Plan instead of required Tier 2 public notification.

Commenters believe Tier 2 reporting should only be used for MCL violations and that requiring this before the compliance date will misinform the public and create a false impression of non-compliance leading to PWS legal exposure.

- *DDW believes Tier 2 notifications are appropriate for MCL exceedances. No specific, enforceable communication plan elements were proposed for consideration.*



# PHG Review

The rulemaking should be delayed to allow OEHHA to fully complete the PHG update because an updated PHG might be higher than the current value; MCL review has been delayed before for PHG review.

- *OEHHA and SWRCB in constant state of PHG and MCL evaluation consideration*
- *Both PHG and MCL reviews are multi-year processes.*
- *Prior MCL review delay noted was for contaminant with existing MCL*
- *The hexavalent chromium MCL is 20 years overdue.*

## Concurrent PHG Publication

Commenters assert that HSC 116365(e)(2) requires concurrent PHG publication and SWRCB proposal for MCLs for newly regulated contaminants.

- *It would be impossible for the MCL to be set “as close as feasible to the corresponding public health goal” if the PHG were not established before the State Water Board began the work to adopt an MCL.*
- *The statute changed to remove “concurrent”; current language “at the same time” is interpreted to mean that a PHG must be in place when the State Water Board proposes to adopt an MCL for a newly regulated contaminant.*

# PHG – Wait for Review Completion

Delay MCL until OEHHA completes the PHG update to include latest science.

- *OEHHA has communicated that review of PHG data call-in submissions has not revealed novel information.*
- *There is no indication that the PHG will be set higher than the proposed MCL.*
- *OEHHA released a draft noncancer health protective concentration (5 ug/L) on November 24, 2023.*

# Consolidation and Alternatives Analysis

The availability and viability of alternatives (consolidation, blending, POU/POE, etc.) are unsupported; no analysis of the alternatives is provided and/or they were not properly considered; cost savings from alternatives were not considered.

- *Prepared and added Consolidation and Alternatives Analysis to documents relied upon. Per statute, economic feasibility must be based on BAT.*

## Material Added to Record – Consolidation and Alternatives Analysis

Commenters would like a more complete analysis than is provided in the *Consolidation and Alternatives Analysis*, as more time, funding, and technical assistance will be needed than is acknowledged.

- *Analysis was limited to available source data. No further analysis is proposed at this time.*

# Economic Feasibility

Economic feasibility should be recalculated/confirmed based on various asserted shortcomings (e.g., does not employ best practices, lacks analytical rigor and transparency, is results-oriented, does not fully capture the cost of compliance, lacks a cost-benefit analysis, underestimates costs, and/or focuses on unrealistic costs).

# Economic Feasibility

- *Economic feasibility analysis complies with statutory requirements, employs best practices and conservative assumptions, and exceeds minimum requirements in transparency of factors considered.*
- *Factors considered included:*
  - *Estimated compliance costs (total, per system, per source, per connection, per person, per unit of water)*
  - *Median and maximum monthly household cost increases*
  - *Types and sizes of affected systems*
  - *Impacts of future planned regulations*
  - *Analysis of household cost increases by system size*
  - *Variability of unit costs at alternative MCLs*

# Economic Feasibility – Cost-Benefit Analysis

Cost-benefit and cost-effectiveness-ratio analyses should be conducted/improved; cost-effectiveness should be re-evaluated.

- *As determined by the court, a cost-benefit analysis is not required.*
- *Only a feasibility analysis is required, which “requires an agency to protect public health to the maximum extent possible, constrained only by what is economically or technically feasible.” (CMTA v. SWRCB, 2021). DDW believes that is achieved with this proposal.*
- *No proposed change to analysis*



# Affordability

Commenters would like an affordability analysis, alternative measure/metrics to determine affordability, an affordability justification for the MCL, and/or a revision to a more affordable MCL.

- *MCL must be set as low as technologically and economically feasible.*
- *Statute does not provide for a different “affordable” MCL that is less protective of public health.*

# Economic Impact Analysis – Water Code Section 13241

State Water Board should conduct Water Code section 13241 analysis, which requires regional water quality control boards (RWQCBs) to ensure reasonable protection of beneficial uses and consider specific factors, including economic considerations.

- *Requested analysis is not required when establishing an MCL.*
- *Requested analysis is completed when MCLs are incorporated by reference to protect domestic and municipal beneficial uses.*
- *Water Code section 13241 factors will be considered if and when proposed MCL forms basis of discharge condition in new or revised waste discharge requirements.*
- *No proposed change to analysis*

# Economic Impact Analysis – Wastewater Agency Treatment Costs

Costs to wastewater agencies should be included because MCLs are incorporated prospectively by reference into most basin plans as water quality objectives.

- *No cost impacts to wastewater agencies expected from proposed MCL*
- *Cannot predict effluent limitations in future permitting actions or incremental cost impacts due to RWQCB discretion for key variables:*
  - *Monitoring frequencies*
  - *Monitoring timeframe considered in reasonable potential analyses*
  - *When permits are renewed*
  - *Application of narrative toxicity objectives*
  - *Compliance schedules*
- *No proposed change to analysis; language added to resolution encouraging RWQCB to avoid imposing unnecessary costs*

# Economic Impact Analysis – Food Producer Compliance Costs

Costs to food producers should be included.

- *Food processors are required to meet certain federal drinking water standards, of which there are currently none for hexavalent chromium.*
- *No proposed change to analysis*

# Economic Impact Analysis – Cost Savings Considerations

Cost analysis should include possible savings (from alternatives, from existing treatment processes that could be modified to also remove hexavalent chromium, and from the capability of BAT to remove other contaminants).

- *HSC 116365 requires the determination of technological and economic feasibility made **using BAT**.*
- *Even without that statutory constraint, data are unavailable to support the analysis requested.*
- *No proposed change to analysis*

# Economic Impact Analysis – RCF vs Ion Exchange as Cost Basis

Commenters request explanation of why RCF was assumed as predominant compliance choice, believe ion exchange should be used more often.

- *RCF is widely applicable.*
- *Peer reviewers disagreed that RCF is inappropriate for very small PWS.*
- *RCF appears less expensive than other BATs in most cases; analysis assumes selection of most cost-effective alternative.*
- *No proposed change to analysis*

## Economic Feasibility – Monetize Health Benefits

Commenters believe monetized health benefits should be included in the economic feasibility analysis (either for cost-benefit analysis or to demonstrate reduced net costs).

- *HSC section 116365 requires the State Water Board to set the MCL as close to the PHG as is technologically and economically feasible, considering the cost using BAT.*
- *Monetizing health benefits would not affect economic feasibility.*
- *As determined by the court, a cost-benefit analysis is not required.*
- *No proposed change to analysis*

## Economic Feasibility - Cumulative Burden

Analysis should include the cumulative burden of existing and projected regulations.

- *Section 11 of the ISOR discusses current rates and affordability and considers impacts of future regulations on overall economic feasibility.*



# Funding

Commenters would like funding to be made available, in addition to support for the establishment of a statewide program for low-income households struggling with water and sewer bills.

- *Availability and provision of funding is not required element of economic feasibility.*
- *Nothing about this action changes the existing process for pursuing financial assistance.*
- *Recommendation for establishment of statewide low-income assistance program is outside scope of current rulemaking.*
- *We recognize that the majority of costs will be funded by PWS and their revenues.*

## Compliance Schedule – Too Short

Commenters would like the compliance period/timeline to be extended.

- *Extending the timeline for all PWS would not be in best interest of public health.*
- *The compliance schedule is a grace period in which PWS are deemed not in violation of the MCL and is not intended to reduce communication to consumers.*

## Compliance Schedule – Too Long

Compliance period for the smallest PWS should be shortened from 4 years to 3 years.

- *Smallest PWS may need the extra time to realize the benefits of developments by other larger systems.*
- *Shorter timelines would increase potential for supply chain delay impacts.*
- *No change was made.*

# Compliance Schedule – Too Long

PWS compliance should be required sooner where possible.

- *Terms such as “where possible” or “as short as practicable” tend to be subjective, unenforceable, and noncompliant with the clarity standard of the Administrative Procedure Act.*
- *Proposed consumer notification requirements encourage prompt compliance.*
- *No change was made.*

# BAT

Proposed BAT should be re-examined because they may not be appropriate for some PWS.

- *Proposed BAT have been confirmed broadly effective through external peer review.*
- *Not all BAT may be appropriate for all PWS.*

# BAT

Other means or methods (e.g., stannous chloride without filtration, new technologies) should be considered as BAT or approved for use.

- *Stannous chloride without filtration has not been proven effective.*
- *Additions to BAT may be considered in future rulemakings.*
- *BAT designation does not preclude permitting of alternative technologies capable of treating for hexavalent chromium.*

## DLRs

Hexavalent chromium can be detected in parts per trillion.

- *Proposed DLR was set to lowest level technologically and economically feasible, allowing for adequate laboratory capacity.*

Proposed DLR and analytical methods are unsuitable for wastewater matrix and should be reserved for drinking water.

- *Proposed regulations apply to public water systems.*

# Analytical Methods

Holding time for EPA Method 218.6 (24 hours) should be extended to that of EPA Method 218.7 (14 days); holding times for both methods should be extended per U.S. EPA guidance.

- *Evaluation of holding time modifications may be considered in future rulemaking.*

Required accuracy of EPA Method 218.6 should be clarified.

- *Required accuracy is specified within method.*



# Monitoring Waivers

Monitoring waivers should be allowed.

- *Provisions for monitoring waivers for inorganic chemicals already available at 22 CCR 64432(m)*

## Previous Construction

The proposed regulation should account for projects that were already constructed to comply with the previous attempt at setting an MCL for hexavalent chromium, including allowing for compliance points to be changed to after blending.

- *Projects already constructed were specifically considered in developing the terms of the Compliance Plans. Data constraints prevented cost accounting for projects already constructed.*
- *Changing compliance points to after blending is allowed.*

## Additional Peer Review

The proposed level of 10 ug/L should be peer reviewed.

- *Only the scientific basis of rulemakings must be peer reviewed.*
- *MCLs are not determined exclusively on a scientific basis.*
- *In setting the MCL value, the State Water Board is statutorily required to consider a variety of factors; where to set the MCL is ultimately a policy decision.*
- *HSC 57004 peer review requirement is satisfied by external scientific peer review of BAT (SWRCB) and PHG (OEHHA).*

## OEHHA Draft

The November 2023 OEHHA Public Review Draft of hexavalent chromium is a draft document and should not be relied upon; clarify the relevance and use of the documents added to the regulatory record.

- *This document was not relied upon in the development of the DDW proposal. However, because of the interest in the PHG update, the document was included.*

# Environmental Impact Report (EIR) Comments

- Comment period concurrent with APA process
- Comments by CDFW; Cities of Winters and Coachella; and Coachella Valley, Mission Springs and Twentynine Palms Water Districts
- Draft EIR revised in response to comments, but recirculation not required because significant new information not added
- Responses provided to commenting agencies at least 10 days before this meeting and provided in the agenda materials and summarized below

# Environmental Impact Report

## Cumulative Impacts

Draft EIR fails to properly analyze cumulative impacts, omitting the past, present, and probable future MCLs that the State Water Board has adopted or planned or the various means by which PWS will implement the hexavalent chromium MCL.

- *Cumulative Analysis includes: 82 previously adopted MCLs; probable future MCLs; PHGs currently under review; and consolidation projects funded via SAFER (Safe and Affordable Funding for Equity and Resilience), the Drinking Water State Revolving Fund or related funding programs.*

# Environmental Impact Report Shift to Surface Water

An overly stringent MCL could cause water agencies to shift from groundwater to surface water usage; EIR must analyze potential environmental impacts of this reasonably foreseeable shift.

- *Distance, water rights, and cost of treatment limit PWS's ability to switch. The Draft EIR notes potential impacts related to a switch, including impacts to fish and other aquatic resources. It is too speculative to know which PWS might increase reliance on surface water.*

# Environmental Impact Report Insufficient Alternatives Analysis

The EIR dismisses all other alternatives as incapable of meeting project objectives without substantive analysis. The EIR cannot dismiss alternatives by concluding that a 10 ppb MCL is technologically and economically feasible and, therefore, not analyze other legally sufficient alternatives.

- *The Draft EIR analyzes nine lower and 11 higher MCLs; the number of counties affected; and provides maps showing the locations of contaminated sources for each alternative MCL. The Board is statutorily required to adopt an MCL that is the lowest technologically and economically feasible.*



# Next Steps

1. Certify final EIR and adopt proposed regulations
2. Submit fiscal and economic impact analysis to Department of Finance
3. Submit rulemaking record to Office of Administrative Law by June 15, 2024
4. Regulations in effect October 1, 2024

# Thank You

## **Drinking Water Rulemaking Questions**

[melissa.hall@waterboards.ca.gov](mailto:melissa.hall@waterboards.ca.gov)

## **Project Website:**

[Bit.ly/Cr6Webpage](http://Bit.ly/Cr6Webpage)

## **Email List – *Drinking Water Program Announcements:***

[bit.ly/SWRCB\\_Email\\_SignUp](http://bit.ly/SWRCB_Email_SignUp)

**Thank you**



**State Water Resources Control Board**