

# CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

## SAN FRANCISCO BAY REGION

RESOLUTION NO. R2-2023-0026

### **Amending the Water Quality Control Plan for the San Francisco Bay Basin to Correct Errors in Freshwater Metal Water Quality Objectives, to Clarify the Basis to Establish Dilution Credits for Non-Priority Pollutants, and to Allow Establishment of Alternative Cyanide Dilution Credits and Mercury Concentration Triggers for Wastewater Treatment Operations**

**WHEREAS, the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), finds that:**

1. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master policy document. It designates the beneficial uses of surface waters and groundwater in the region and establishes water quality objectives to protect the beneficial uses. It also includes programs of implementation to achieve the water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), the State Office of Administrative Law (OAL), and the United States Environmental Protection Agency (U.S. EPA), where required.
2. The Basin Plan may be amended in accordance with Water Code section 13240. This Basin Plan amendment complies with this section.
3. The Basin Plan amendment, including specifications on its physical placement in the Basin Plan, is set forth in Exhibit A. This Basin Plan amendment: 1) corrects errors in freshwater objective calculation formulas for selected metals to be consistent with the California Toxics Rule (CTR) or National Toxics Rule (NTR); 2) clarifies that other applicable policies, regulations, and guidance aside from the State Implementation Policy (SIP) may be used when developing dilution credits for non-priority pollutants; 3) allows establishment of alternative cyanide dilution credits and mercury concentration triggers to accommodate water recycling projects or to reflect material and substantial changes in wastewater treatment operations and conditions; and 4) includes general cleanup for Table 3-4 to add clarifications, to update obsolete information, or to improve formatting.
4. Basin Plan Table 3-4 contains freshwater water quality objectives for selected toxic pollutants to protect surface water bodies. The water quality objectives for chromium (III), copper, lead, nickel, silver, and zinc, are based on U.S. EPA criteria established for California waters, such as the CTR and NTR criteria. There are calculation formulas in the footnotes to calculate the objectives for these metals as a function of the hardness. In 2004, while amending the Basin Plan to incorporate the CTR and NTR criteria, the Water Board unintentionally left out a conversion factor in the formulas to convert the objectives in the total recoverable form to the dissolved form of the metals. The Basin Plan amendment will correct the formulas by including the conversion factor

that accounts for the fraction of metal that is dissolved and will make Table 3-4 consistent with the CTR and NTR.

5. The SIP was developed and adopted specifically to implement the water quality criteria for the 126 priority pollutants in the CTR. For pollutants not listed in the CTR (“non-priority pollutants”), other policies, regulations, and guidance may be more appropriate; however, the Basin Plan is worded to only allow the use of SIP as a basis to develop dilution credits for all toxic pollutants. The Basin Plan amendment will allow the Water Board to use other applicable policies, regulations, and guidance aside from the SIP for developing dilution credits for non-priority pollutants.
6. Basin Plan Table 4-6 contains cyanide dilution credits for the region’s thirteen shallow water dischargers, which were developed along with the cyanide site-specific objectives in 2006 and incorporated into the Basin Plan in 2008. The Water Board also developed the San Francisco Bay Mercury TMDL in 2006 and adopted it through an amendment of the Basin Plan in 2008. In addition to the mass-based wasteload allocations in the Mercury TMDL, there are concentration triggers based on the wastewater treatment facilities’ performance almost twenty years ago. When the cyanide dilution credits and mercury triggers were established, the Water Board did not anticipate the effects that producing recycled water, conserving water, or changing from the production of crude oil to biofuel could have on pollutant concentrations in wastewater.

The Basin Plan amendment will allow the Water Board to develop alternative cyanide dilution credits and alternative mercury concentration triggers for municipal dischargers that accommodate water conservation and water recycling projects while still protecting water quality.

The Basin Plan amendment will also allow the Water Board to develop alternative cyanide dilution credits and alternative mercury concentration triggers for industrial dischargers to permit water recycling projects and to address a material and substantial alteration or addition to the permitted facility (e.g., use of new raw materials in the production process) while still protecting water quality.

7. Peer review is not required under Health and Safety Code section 57004. All of the scientific portions of the proposed Basin Plan amendment were previously peer reviewed. Thus, additional peer review is not required.
8. The water quality control planning program is a regulatory program that has been certified as exempt from the requirement to prepare an Environmental Impact Report or Negative Declaration in accordance with Public Resources Code section 21080.5.
9. The Basin Plan amendment, Environmental Checklist, Staff Report, and supporting documentation are available on the Water Board’s website and serve as a Substitute Environmental Documentation under the Water Board’s certified regulatory program. The Substitute Environmental Documentation reflects the independent judgment and analysis of the Water Board.

10. The Water Board has duly considered the Substitute Environmental Documentation. The Water Board finds that there will be no significant environmental impacts, either individually or cumulatively, as a result of this Basin Plan amendment or the reasonably foreseeable methods of compliance with the amendment.
11. On September 21, 2023, Water Board staff publicly noticed and distributed for public review and comment the proposed Basin Plan amendment and draft Substitute Environmental Documentation, in accordance with applicable State and federal laws and regulations. Water Board staff also conducted outreach to potentially affected disadvantaged communities and tribal communities.
12. The Water Board has carefully considered all comments and testimony received, including responses thereto, on the Basin Plan amendment, as well as all the evidence in the administrative record.
13. Pursuant to Water Code section 13149.2, the Water Board has considered readily available information concerning potential water quality impacts in disadvantaged communities and tribal communities that may result from the adoption of the Basin Plan amendment. The Basin Plan amendment will not have adverse impacts to water quality. The amendment will be implemented through NPDES permits that include requirements to meet water quality objectives and protect beneficial uses.
14. On December 13, 2023, the Water Board held a public hearing to consider the amendment, including response to public comments on the amendment.
15. Adoption of the Basin Plan amendment is consistent with the state and federal antidegradation policies (State Water Board Resolution No. 68-18 and 40 C.F.R. § 131.12).
16. The Basin Plan amendment must be submitted for review and approval by the State Water Board, OAL, and U.S. EPA. Once approved by the State Water Board, the amendment will be submitted to OAL and U.S. EPA. The Basin Plan amendment will become effective upon approval by OAL and U.S. EPA.

**NOW, THEREFORE BE IT RESOLVED THAT:**

1. The Water Board approves the Substitute Environmental Documentation and adopts the Basin Plan amendment as set forth in Exhibit A hereto.
2. The Executive Officer is directed to forward copies of the Basin Plan amendment to the State Water Board in accordance with the requirements of Water Code section 13245.
3. The Water Board requests that the State Water Board approve the Basin Plan amendment in accordance with the requirements of Water Code sections 13245 and 13246 and forward it to OAL and U.S. EPA for approval.
4. If, during the approval process, Water Board staff, the State Water Board, or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes and shall inform the Water Board of any such changes.

5. Because the Basin Plan amendment will involve no potential for adverse effect, either individually or cumulatively, on wildlife, the Executive Officer is directed to sign a CEQA Filing Fee No Effect Determination Form and to submit the exemption in lieu of payment of the Department of Fish and Wildlife CEQA filing fee.

I, Eileen White, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 13, 2023

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Eileen White  
Executive Officer

**Attachment:**

Exhibit A – Basin Plan Amendment

# Exhibit A

PROPOSED BASIN PLAN AMENDMENT

# Proposed Basin Plan Amendment

Revisions indicated in single underline represent new language, and revisions indicated in ~~strikeout~~ represent deleted language.

## 1. Proposed changes to Table 3-4

**Table 3-4: Freshwater<sup>a</sup> Water Quality Objectives for Toxic Pollutants for Surface Waters (all values in µg/L)**

Compound	4-day Average	1-hr Average
Arsenic <sup>b, c, d</sup>	150	340
Cadmium <sup>b, d</sup>	e	e
Chromium III <sup>c, d, f</sup>		
Chromium VI <sup>b, c, d, g</sup>	11	16
Copper <sup>b, c, d</sup>	9.0 <sup>h</sup>	13 <sup>h</sup>
Cyanide <sup>i</sup>		
Lead <sup>b, c, d</sup>	2.5 <sup>j</sup>	65 <sup>j</sup>
Mercury <sup>k</sup>		2.4
Nickel <sup>b, c, d</sup>	52 <sup>l</sup>	470 <sup>l</sup>
Selenium <sup>m</sup>		
Silver <sup>b, c, d</sup>		3.4 <sup>n</sup>
Tributyltin <sup>o</sup>		
Zinc <sup>b, c, d</sup>	120 <sup>p</sup>	120 <sup>p</sup>

### Notes:

- Freshwaters are those in which the salinity is equal to or less than 1 part per thousand 95% of the time, as set forth in Chapter 4 of the Basin Plan. Unless a site-specific objective has been adopted, these objectives shall apply to all freshwaters except for the South Bay south of Dumbarton Bridge, where the California Toxics Rule (CTR) applies. For waters in which the salinity is between 1 and 10 parts per thousand, the applicable objectives are the more stringent of the marine (Table 3-3) and freshwater objectives.
- Source: 40 CFR Part 131.38 (California Toxics Rule or CTR), May 18, 2000.
- These objectives for metals are expressed in terms of the dissolved fraction of the metal in the water column.
- These objectives are expressed as a function of the water-effect ratio (WER), which is a measure of the toxicity of a pollutant in site water divided by the same measure of the toxicity of the same pollutant in laboratory dilution water. ~~The 1-hr. and 4-day objectives = table value × WER. The table values assume a WER equal to one.~~
- The objectives for cadmium ~~and other noted metals~~ are expressed in the total recoverable form by formulas where H = ln (hardness) as CaCO<sub>3</sub> in mg/l: The four-day average objective for cadmium is a WER times e<sup>(0.7852H-3.490)</sup>. This is 1.1 µg/l at a hardness of 100 mg/l as CaCO<sub>3</sub>. The one-hour average objective for cadmium is a WER times e<sup>(1.128H-3.828)</sup>. This is 3.9 µg/l at a hardness of 100 mg/l as CaCO<sub>3</sub>.
- Chromium III criteria were promulgated in the National Toxics Rule (NTR). The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta. Note: at the time of writing, the values are 180 ug/l (4-day average) and 550 ug/l (1-hr. average). The

objectives for chromium III are based on hardness. The values in this footnote assume a hardness of 100 mg/l CaCO<sub>3</sub>. At other hardnesses, the objectives must be calculated using the following formulas where H = ln (hardness): The 4-day average objective for chromium III is a WER times a conversion factor (CF) times  $e^{(0.8190H+1.561)}$ . The 1-hour average for chromium III is a WER times a CF times  $e^{(0.8190H+3.688)}$ . The CF (or "translator") adjusts the criterion expressed as the total recoverable fraction in the water column to an objective expressed as the dissolved fraction in the water column. If a site-specific CF is unavailable, the CTR CF (40 C.F.R. section 131.38(b)(2)(iv), "Table 2 to paragraph (b)(2) of this section") may be used.

- g. This objective may be met as total chromium.
- h. The objectives for copper are based on hardness. The table values assume a hardness of 100 mg/l CaCO<sub>3</sub>. At other hardnesses, the objectives must be calculated using the following formulas where H = ln (hardness): The 4-day average objective for copper is a WER times a CF times  $e^{(0.8545H-1.702)}$ . The 1-hour average for copper is a WER times a CF times  $e^{(0.9422H-1.700)}$ . If a site-specific CF is unavailable, the CTR CF may be used.
- i. Cyanide criteria were promulgated in the National Toxics Rule (NTR). The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta. Note: at the time of writing, the values are 5.2 ug/l (4-day average) and 22 ug/l (1-hr. average).
- j. The objectives for lead are based on hardness. The table values assume a hardness of 100 mg/l CaCO<sub>3</sub>. At other hardnesses, the objectives must be calculated using the following formulas where H = ln (hardness): The 4-day average objective is a WER times a CF times  $e^{(1.273H-4.705)}$ . The 1-hour average for lead is a WER times a CF times  $e^{(1.273H-1.460)}$ . If a site-specific CF is unavailable, the CTR CF may be used.
- k. Source: U.S. EPA Quality Criteria for Water 1986 (EPA 440/5-86-001). The 1-hour average value continues to apply to waters specified in Table 3-4A. For inland surface waters other than those covered under Table 3-4A, refer to Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California — Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions (Statewide Mercury Provisions).
- l. The objectives for nickel are based on hardness. The table values assume a hardness of 100 mg/l CaCO<sub>3</sub>. At other hardnesses, the objectives must be calculated using the following formulas where H = ln (hardness): The 4-day average objective is a WER times a CF times  $e^{(0.8460H+0.0584)}$ . The 1-hour average objective is a WER times a CF times  $e^{(0.8460H+2.255)}$ . If a site-specific CF is unavailable, the CTR CF may be used.
- m. Selenium criteria were promulgated for all San Francisco Bay/Delta waters in the National Toxics Rule (NTR). The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta. Note: at the time of writing, the values are 5.0 ug/l (4-day average) and 20 ug/l (1-hr. average), expressed in the total recoverable form.
- n. The objective for silver is based on hardness. The table value assumes a hardness of 100 mg/l CaCO<sub>3</sub>. At other hardnesses, the objective must be calculated using the following formula where H = ln (hardness): The 1-hour average objective for silver is a WER times a CF times  $e^{(1.72H-6.52)}$ . If a site-specific CF is unavailable, the CTR CF may be used. U.S. EPA has not developed a 4-day criterion.
- o. Tributyltin is a compound used as an antifouling ingredient in marine paints and toxic to aquatic life in low concentrations. U.S. EPA has published ~~draft~~ criteria for protection of aquatic life, Ambient Aquatic Life Water Quality Criteria for Tributyltin (TBT) – Final (EPA 822-R-03-031, December 2003) (Federal Register: December 27, 2002, Vol. 67, No. 249, Page 79090-79094). These criteria are cited for advisory purposes. ~~The draft criteria may be revised.~~
- p. The objectives for zinc are based on hardness. The table values assume a hardness of 100 mg/l CaCO<sub>3</sub>. At other hardnesses, the objectives must be calculated using the following formulas where H = ln (hardness): The 4-day average objective for zinc is a WER times a CF times  $e^{(0.8473H+0.884)}$ . The 1-hour average for zinc is a WER times a CF times  $e^{(0.8473H+0.884)}$ . If a site-specific CF is unavailable, the CTR CF may be used.

## 2. Proposed Change to Section 4.6.1.2

### 4.6.1.2 Shallow Water Discharges

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However, dilution credit may be granted on a discharger-by-discharger and pollutant-by-pollutant basis. Dilution credits for priority pollutants shall be based on provisions of the "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bay, and Estuaries of California (SIP)." Dilution credits for non-priority pollutants may be based on the SIP or other applicable policies, regulations, or guidance. In making this determination, the Water Board will grant dilution credit on a pollutant-by-pollutant basis if the discharger demonstrates that an aggressive pretreatment and source control program is in place, including the following:

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## 3. Proposed Change to Section 4.7.2.2

### 4.7.2.2 Cyanide

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Effluent limits for shallow water dischargers that have been granted an exception to Basin Plan Prohibition 1 shall be based on the dilution credits set forth in Table 4-6. Alternatively, effluent limits for these shallow water dischargers may be based on updated dilution credits derived in accordance with the SIP requirements to account for water conservation or water recycling projects. Setting forth dilution credits in Table 4-6 does not authorize discharges into shallow waters. Each discharger must continue to satisfy all requirements for an exception to Basin Plan Prohibition 1.

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## 4. Proposed Change to Section 7.2.2.6

### 7.2.2.6 Mercury TMDL Implementation

#### *Municipal Wastewater*

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Effluent mercury trigger concentrations for secondary treatment facilities are a daily maximum of 0.065 µg/L total mercury and monthly average of 0.041 µg/L total mercury. For advanced treatment facilities, effluent mercury trigger concentrations are a daily maximum of 0.021 µg/L total mercury and a monthly average of 0.011 µg/L total mercury. The Water Board may develop and implement alternative performance-based triggers on a discharger-by-discharger basis to account for water conservation or water recycling projects.

...

#### *Industrial Wastewater*

... Includes an action plan and time schedule to correct and prevent trigger exceedances. Effluent mercury trigger concentrations are a daily maximum of 0.062 µg/L total mercury and monthly average of 0.037 µg/L total mercury. The Water Board may develop and implement alternative performance-based triggers on a discharger-by-discharger basis to account for water recycling projects or when there is material and substantial alteration or addition to the permitted facility.

...