



Proposed Revisions to Water Quality Objectives for Secondary MCLs

- 1) Page III-3.00 of the Water Quality Control Plan (Basin Plan) for the Sacramento River Basin and the San Joaquin River Basin - Fourth Edition should be modified as follows:

Chemical Constituents

At a minimum, surface water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum (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) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant levels-Consumer Acceptance Limits) ~~and 64449-B (Secondary Maximum Contaminant Levels-Ranges)~~ and of Section 64449. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect...

- 2) Page III-10.00 of the Water Quality Control Plan (Basin Plan) for the Sacramento River Basin and the San Joaquin River Basin - Fourth Edition should be modified as follows:

Chemical Constituents

At a minimum, ground waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum (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) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant levels-Consumer Acceptance Limits) ~~and 64449-B (Secondary Maximum Contaminant Levels-Ranges)~~ of Section 64449. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect...

- 3) Page III-3 of the Water Quality Control Plan (Basin Plan) for the Tulare Lake Basin - Second Edition should be modified as follows:

Chemical Constituents

At a minimum, surface water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum (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) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant levels-Consumer Acceptance Limits) and ~~64449-B (Secondary Maximum Contaminant Levels-Ranges)~~ of Section 64449. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect...

- 4) Page III-7 of the Water Quality Control Plan (Basin Plan) for the Tulare Lake Basin - Second Edition should be modified as follows:

Chemical Constituents

At a minimum, ground waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum (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) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant levels-Consumer Acceptance Limits) and ~~64449-B (Secondary Maximum Contaminant Levels-Ranges)~~ of Section 64449. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect...

- 5) In addition, all four sections of both Basin Plans should be revised to authorize the Regional Board to waive or modify compliance with the Secondary Maximum Contaminant Levels (SMCLs) where warranted by site-specific considerations including, but not limited to: (a) the availability of assimilative capacity in the receiving water, (b) naturally occurring background concentrations that already exceed the SMCLs, (c) background concentrations that already exceed the SMCLs due to prior anthropogenic activities and it is not feasible or practicable to remediate the effect of these past discharges, (d) the net effect of the discharge on chemical concentration(s) in the receiving water improves existing water quality, (e) it is infeasible or impracticable to achieve compliance with the SMCLs at the point-of-discharge, (f) the availability of suitable alternative water supplies, (g) the chemical form/species of these constituents, (h) the presence or absence of other minerals (e.g. anion-cation balance) that may mitigate or aggravate aesthetic acceptability, (i) application of more appropriate long-term averaging periods, or (j) the exception criteria identified in §64449.2 of Title 22.

Background

In September of 2007, the Central Valley Regional Board issued Waste Discharge Requirements and a Master Reclamation Permit to the City of Lodi (Order No. R5-2007-0113; NPDES No. CA0079243). In October of 2007, the California Sportfishing Protection Alliance (CALSPA) filed a petition with the State Water Resources Control Board (SWRCB) seeking review of the aforementioned permit. In June of 2009, the Regional Board submitted written comments to the SWRCB objecting to the applicability of SMCLs as water quality objectives without regard for such MCLs are applied and enforced by the Department of Public Health and without consideration for the natural background concentration of the chemical constituents throughout the region.

In July of 2009, the State Water Resources Control Board (SWRCB) remanded the permit in part for failure to make findings necessary to demonstrate the permit complies with the Basin Plan objectives for certain chemical constituents including the secondary MCLs (Order WQ 2009-0005). The SWRCB noted that the Basin Plan incorporates only the numeric values specified in select tables from Title-22 and does not incorporate the monitoring, reporting or waiver provisions that are specified in Section 64449 of Title-22. The SWRCB also determined that the Basin Plan does not require the Regional Board to establish a fixed consumer acceptance contaminant level prior to implementing the EC objective.

The proposed revisions to the Water Quality Objectives chapter of both Basin Plans is intended to address the issues raised by the City of Lodi's permit and to provide the Regional Board with the legal authority necessary to consider relevant site-specific factors when developing appropriate waste discharge requirements related to certain chemical constituents.

Justification for the Proposed Revisions:

- 1) The SMCLs identified in Table 64449-A and Table 64449-B of Title-22 were established by the Department of Public Health (DPH) to discourage elevated concentrations of chemical constituents that may adversely affect the taste and odor of municipal drinking water. Title-22 requires only that community water systems monitor and report the concentration of these chemical constituents to DPH and the public. DPH does not require any corrective action should the concentration of any chemical constituent identified in Table 64449-B exceed the SMCL. And, pursuant to §64449.2 of Title-22, community water systems may apply for a waiver from any or all of the SMCLs identified in Table 64449-A. However, this waiver clause was accidentally omitted when Table 64449-A was added (by reference) to the Central Valley Basin Plans. Consequently, the making the SMCLs enforceable water quality objectives imposes restrictions on wastewater discharges that are far more restrictive than the underlying Title-22 requirements from which these objectives were derived. This was neither intended or desired by the Regional Board.

- 2) When the SMCLs were adopted as water quality objectives only the Tables in §64449 were added to the Basin Plan. Other contextual language from §64449 was accidentally omitted from the related Basin Plan amendment. Consequently, the "Consumer Acceptance Contaminant Level Ranges" specified in Table 64449-B were subsequently misapplied as "not-to-exceed" effluent limitations in NPDES permits and WDRs. Such an approach is not consistent with the full text of §64449(d) which states that "no fixed consumer acceptance level has been established" for the chemical constituents identified in Table 64449-B (including Total Dissolved Solids and Specific Conductance). Title-22 also provides that "constituent concentrations ranging to the Upper contaminant level are acceptable if it is neither reasonable nor feasible to provide more suitable water."¹
- 3) Federal and state regulations do not require adoption of the SMCLs as formal water quality objectives. Several other Regional Water Quality Control Boards (#3, #6, #7 and #9) have declined to do so. And, Region #1 is in the process of amending its Basin Plan to delete some SMCLs. All of these Regions rely instead on narrative receiving water limitations to regulate mineral concentrations where necessary to prevent objectionable tastes and odors in downstream drinking waters.
- 4) The Maximum Contaminant Level Ranges for TDS and Specific Conductance in Table 64449-B are inconsistent with statewide Sources of Drinking Water Policy. SWRCB Res. No. 88-63 provides that all surface and ground waters should be considered suitable for municipal or domestic water supply until the TDS concentration exceeds 3,000 mg/L (5,000 uS/cm). Application of the SMCLs as formal water quality objectives creates considerable public confusion and regulatory uncertainty by declaring water quality to be both "suitable" and "impaired" at the same time.
- 5) The Secondary MCLs are intended to address aesthetics, such as taste and odor, not human health concerns. Consumer acceptance is highly subjective and complicated by factors such as the form and combination of specific constituents (e.g. sodium-sulfate vs. calcium-sulfate) and the presence or absence of other major anions and cations. The current numeric water quality objectives do not provide adequate consideration for the influence of other factors that may aggravate or mitigate objectionable tastes and odors. Therefore, it is reasonable to rely on narrative receiving water limitations, as other Regional Boards have done, to develop appropriate waste discharge requirements on a case-by-case basis as needed to protect downstream water supplies.
- 6) Establishing numeric water quality objectives to prevent objectionable tastes and odors had the unintended effect of requiring the Regional Board to impose numeric effluent limits on municipal wastewater discharges despite the fact that DPH strictly prohibits recycled water from being served through community water systems. The result was wasteful and unnecessary treatment requirements that provided no meaningful benefit to the public.

¹ 22 CCR 64449(d)(2) [*emphasis added*]

- 7) Establishing numeric water quality objectives for TDS and Specific Conductance discourages dischargers (both point and non-point sources) from implementing more aggressive water conservation practices. Water conservation frequently increases the concentration of mineral salts by reducing the volume of water used to transport wastes or irrigate crops. Moreover, such disincentives can occur even where the discharges may actually improve water quality in the receiving water. The Regional Board should have the legal flexibility to develop waste discharge requirements that best balance the relative advantages of water conservation, including significant environmental benefits, against any potential impact on receiving water quality.
- 8) The Regional Board's on-going obligation to issue waste discharge requirements that are consistent with SWRCB Resolution No. 68-16 provides adequate protection against water quality degradation from chemical constituents identified in Tables 64449A & B of Title-22. Lowering water quality is generally disallowed unless the Regional Board determines that (a) beneficial uses will not be unreasonably affected, (b) best practicable treatment or control has been applied, and (c) that doing so is consistent with "maximum benefit" to the people of the State. Deleting some of the SMCLs from the Basin Plan does not create a license to discharge these chemical constituents at will or without limit. It does, however, provide the Regional Board with the additional legal authority to regulate these chemical constituents based on a wide range of relevant factors as was always intended by the narrative provisions of §64449 in Title 22.
- 9) Where waste discharges have the potential to affect source water quality in water supply intakes for community water systems located downstream/downgradient, the Regional Board may require a discharger to develop a more detailed mass balance analysis prior to authorizing a permit. The purpose of this mass-balance analysis will be to determine how the proposed discharge will affect the concentration of certain chemical constituents, identified in Tables 64449-A and B of Title 22, at the downstream water supply intakes. Where downstream/downgradient water quality continues to meet the SMCLs, the effect of the upstream discharge will be deemed "de minimus" and will likely be permitted in accordance with state antidegradation policy (Res. No. 68-16).
- 10) Historically, compliance with the SMCLs identified in Table 64449-A has been determined using the Total Recoverable metals fraction. This approach is no longer necessary because federal law requires community water systems to filter surface water prior to delivery.² Continuing to rely on Total Recoverable metals to assess compliance with SMCLs in the receiving water overestimates the potential aesthetic impact on the actual quality of downstream drinking water. Mandatory filtration significantly reduces the concentration of total suspended solids (TSS), including aesthetically objectionable minerals such as iron, manganese, chloride, sulfate and aluminum, prior to reaching the tap. It is appropriate to assess compliance with chemical constituents in Table 64449-A based on the dissolved metal concentrations.

² U.S. EPA. National Primary Drinking Water Regulations: Long Term 2 Enhanced Surface Water Treatment Rule. 71 FR 3, 654 (January 5, 2006).