Central Valley Regional Water Quality Control Board
7/8 June 2012 Board Meeting

Response to Comments
for the
City of Modesto
Water Quality Control Facility
Tentative Waste Discharge Requirements
and Tentative Time Schedule Order

The following are Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (NPDES Permit No. CA0079103) renewal and tentative Time Schedule Order (TSO) for the City of Modesto (Discharger) Water Quality Control Facility (Facility).

The tentative NPDES Permit and tentative TSO were issued for a 30-day public comment period on 20 March 2012 with comments due by 20 April 2012. The Central Valley Water Board received public comments regarding the tentative Permit by the due date from the Discharger, the California Sportfishing Protection Alliance (CSPA), and the Central Valley Clean Water Association (CVCWA). No comments were received regarding the tentative TSO. Some changes were made to the tentative Permit based on public comments received.

The submitted comments were accepted into the record, and are summarized below, followed by Central Valley Water Board staff responses.

DISCHARGER COMMENTS

Discharger Comment No. 1. Dilution and Mixing Zone

The Discharger requests removal of provision VI.C.2.b, which requires submittal of an updated dilution/mixing zone study by February 2014. The Discharger included as part of its public comments a mixing zone and dilution analysis to address the human health water quality objective dilution granted in the permit.

> **RESPONSE:** Central Valley Water Board staff concurs. The update to the 2003 Mixing Zone study includes the necessary information to identify the size of the mixing zones for human carcinogen criteria and agricultural criteria, for both the secondary and tertiary discharges. Section IV.C.2 of the Fact Sheet has been updated based on the new information provided by the Discharger. In addition, the requirement to submit an updated mixing zone study (i.e., Special Provisions VI.C.2.b) has been removed from the proposed Permit.

Discharger Comment No. 2. Description of the Project Phasing and Permitting

The Discharger requests that Tentative Permit provisions in the tentative Permit be revised to identify the current permitted year-round tertiary discharge capacity of 4.8 mgd in addition to the current secondary treated discharge. It is described in the Fact Sheet (page F-72 of the Tentative Permit) "This Order allows for an increase in year-round tertiary discharge flow of 14.3 mgd (an increase in discharge from 4.8 mgd to 19.1 mgd)." Thus, the Discharger request that this statement is incorporated in other sections of the permit, such as Finding II.A. (Facility Description). Additionally, the Discharger requests that the mass limits allocated for Phase 1A flows of the year-round tertiary discharge should be based on the currently permitted flows of 4.8 mgd.

RESPONSE: The Discharger has requested that Finding II.A includes clarification that a flow increase is allowed and has requested the permitted flow to be increased from 2.3 mgd to 4.8 mgd, which is the permitted flow in the current permit: The requested clarifying language has been added to Finding II.A to be consistent with the Fact Sheet. However, the request to maintain the currently permitted flow and mass effluent limits have not been made.

The existing Order includes an average daily discharge flow effluent limit of 4.8 mgd for the tertiary discharge. This was based on the Discharger's proposed facility upgrades and was contingent on the Discharger upgrading the Facility to a 4.8 mgd design capacity. The construction of the 4.8 mgd tertiary treated facility was planned in 2 phases, Phase 1A and Phase 1B. The Phase 1A construction of tertiary treatment facilities (2.3 mgd) was completed on 1 July 2010. Phase 1B (2.5 mgd) has not proceeded to construction and is no longer planned as a stand-alone project. The Phase 1B upgrade project has been added to the proposed Phase 2 upgrade that is expected to be initiated in 2012, with completion expected by February 2018. The Phase 2 project will have a design capacity of 14.9 mgd. This change in the phasing of the facility upgrades is the main reason for the early renewal of the permit. It is also the basis for why the current discharge flow is proposed to be held at 2.3 mgd.

Federal Regulations at 40 CFR 122.45(b)(1) requires that, "In the case of POTWs, permit effluent limitations, standards, or prohibitions shall be calculated based on design flow." See also *In Re: City of Port of St. Joe and Florida Coast Paper Company* 7 E.A.D. 275 (U.S. EPA Environmental Appeals Board, 1997) noting that the NPDES regulations do not provide guidance on how to establish appropriate mass limits for a POTW, except for the general direction that in the case of POTWs, permit effluent limitations, standards, or prohibitions, shall be based on design flow.

Since the current facility only has a capacity of 2.3 mgd, the average daily flow limit for the tertiary discharge must be reduced to 2.3 mgd. The reduced flow limit is only for the Phase 1A facility. This results in a reduction in the mass effluent limits for ammonia (as N), biochemical oxygen demand (BOD), and total suspended solids (TSS), because the mass effluent limits are derived using the new lower design flow,

and compliance with the limits is calculated using the current flow limit . The temporary reduction in allowed flow does not change the fact that the overall allowed discharge flow increases to 19.1 mgd in the proposed Permit. The proposed Permit allows the flow limit and mass limits to increase as the Discharger constructs the necessary facility improvements with sufficient design capacity.

Discharger Comment No. 3. Mercury Mass Effluent Limitation

The Discharger requests that the mercury mass-based effluent limitations for both the secondary and the tertiary dischargers (Provisions IV.A.1.j and IV.A.2.i) be removed from the Tentative Permit based on the finding that there was no reasonable potential to cause or contribute to a water quality objective exceedance.

RESPONSE: Central Valley Water Board does not concur. The current USEPA Ambient Water Quality Criteria for Protection of Freshwater Aquatic Life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a one-in-a-million cancer risk) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. The discharge does not have reasonable potential based on these water quality criteria. However, both values are controversial and subject to change. In 40 CFR Part 131, USEPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that "…*more stringent mercury limits may be determined and implemented through use of the State's narrative criterion.*" In the CTR, USEPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

Furthermore, the San Joaquin River (Merced River to Tuoluomne) has been listed as an impaired water body pursuant to Section 303(d) of the Clean Water Act, because of mercury. Mercury bioaccumulates in fish tissue, and therefore, the discharge of mercury to the receiving water may contribute to exceedances of the narrative toxicity objective and impacts on beneficial uses. A TMDL for mercury in the San Joaquin River is proposed for the year 2016. Nevertheless, because the San Joaquin River has been listed as an impaired water body for mercury, the discharge must not cause or contribute to increased mercury levels. Section 2.1.1 of the SIP[1] states that for bioaccumulative priority pollutants for which the receiving water is impaired "…*the RWQCB should consider whether the mass loading of the bioaccumulative pollutant(s) should be limited to representative, current levels pending TMDL development in order to implement the applicable water quality standard.*"

The current permit includes a performance-based mass loading limit that caps the discharge for mercury based on concerns of increased mercury loading to the San

[1] *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP), State Water Resources Control Board (February 2005)

Joaquin River. Although the discharge may not clearly demonstrate reasonable potential for mercury, the proposed Permit carries forward the existing performance-based mercury mass loading limit. The Clean Water Act specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in Clean Water Act sections 402(o) or 303(d)(4), or, where applicable, 40 CFR 122.44(l).

Some clarifying language regarding mercury has been added to the Fact Sheet in the proposed Permit.

Discharger Comment No. 4. Mercury Pollution Prevention Plan

The Discharger requests that the Pollution Prevention Plan (Provision VI.C.3.a) for mercury be removed from the Tentative Permit because: (1) there is no concentration based effluent limitation, and (2) compliance with the mass limitation is known to be achievable.

RESPONSE: See response to Discharger Comment No. 3.

Discharger Comment No. 5. Performance Based Effluent Limitations for Molybdenum

The Discharger requests that a permit reopener be included to allow the introduction of new information to establish an appropriate effluent limitation for molybdenum. The Tentative Permit includes a final performance-based effluent limitation for molybdenum based on historical discharge rather than the receiving water quality. The Tentative Permit finds sufficient assimilative capacity and dilution to allow a much higher effluent limitation. However, the Tentative Permit finds "*that granting of these dilution credits could allocate an unnecessarily large portion of the receiving water's assimilative capacity*" and reverts to the performance-based effluent limit for both the secondary and tertiary discharges. This is in compliance with the SIP that requires mixing zones are as small as practicable. The Discharger requests that a permit reopener be included to establish new effluent limits for molybdenum if new information is introduced by the Discharger that justifies the change.

RESPONSE: Central Valley Water Board staff concurs and the following reopener has been added to Section VI.C.1.f of the proposed Permit.

f. ***Molybdenum Effluent Limits.*** *This Order allows a dilution credit for molybdenum for development of water quality-based effluent limits. However, the amount of dilution allowed has been reduced, based on the Facility's performance to control molybdenum. A maximum daily performance-based effluent limit of 23 µ/L was calculated for molybdenum based on effluent data from 2001 to 2007. If the Discharger submits new monitoring results with*

acceptable MDLs and RLs (Attachment F, Section IV.C.3.d.xii.(b)), that justifies a different performance-based effluent limit for molybdenum, this Order may be reopened to modify the effluent limitations for molybdenum.

Discharger Comment No. 6. Requirement that the Facility's Tertiary Effluent Meet Title 22 Recycled Water Criteria, page F-57

The Discharger disagrees with the statement on page F-57 of the Tentative Permit that Department of Public Health (DPH) reclamation criteria, CCR, Title 22, division 4, chapter 3 (Title 22 Criteria) are applicable to the discharge to the San Joaquin River. The Title 22 criteria are for reclamation of wastewater, not for discharges to surface waters. At the very least, the Discharger request that Special ProvisionVI.C.6.a of the Tentative Permit be clarified to specifically mention which of the Title 22 criteria are applicable to the surface water discharge. As currently written, this provision is too broad and requires that "*The year-round tertiary discharge shall be oxidize, filtered, and adequately disinfected pursuant to the Department of public Health (DPH) reclamation criteria, CCR, Title 22, Division 4, Chapter 3, (Title 22) or equivalent.*"

RESPONSE: Central Valley Water Board staff does not concur that the proposed Permit inappropriately requires disinfection equivalent to Title 22 disinfected tertiary recycled water for the year-round discharge. The year-round discharge of tertiary treated municipal wastewater may at times receive little or no dilution. The DPH recommends treatment equivalent to Title 22 disinfected tertiary recycled water in these situations. DPH has developed Title 22 reclamation criteria for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median.

Title 22 is not directly applicable to surface waters; however, DPH recommends an equivalent level of treatment to Title 22 reclamation criteria to protect public health, because undiluted tertiary treated municipal wastewater may be used for the irrigation of food crops and/or for direct body-contact water recreation.

For the year-round discharge, the proposed Permit requires the Discharger provide treatment equivalent to Title 22 disinfected tertiary recycled water, which is defined in Title 22 as a pathogen-free wastewater[2]. The proposed Permit includes effluent limits and operating specifications to ensure this level of disinfection, including effluent limits for total coliform organisms, and operating specifications for the

[2] CCR 60301.230 defines "disinfected tertiary recycled water" as a disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater, and the effluent total coliform levels do not exceed 2.2 MPN/100 mL as a 7-day median or 23 MPN/100 mL more than once in a 30-day period.

ultraviolet (UV) disinfection system (e.g., turbidity, UV dose, and UV transmittance). Compliance with total coliform effluent limits alone does not ensure that pathogens in the municipal wastewater have been deactivated by the UV disinfection system. Compliance with both the effluent limits and the UV operating specifications demonstrates compliance with the equivalency to Title 22 disinfection requirement.

The Discharger comments that the provision to require equivalent to Title 22 disinfection is too broad and requested clarification in the proposed Permit. The Fact Sheet, Section VII.C.6, of the proposed Permit has been modified as shown below in underline/strikeout format, to provide clarification of the Title 22, or equivalent, disinfection requirements.

The year-round tertiary discharge shall be oxidized, filtered, and adequately disinfected pursuant to the Department of Public Health (DPH) reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent.

For the year-round discharge, this Order requires the Discharger provide treatment equivalent to Title 22 disinfected tertiary recycled water, which is defined in Title 22 as a pathogen-free wastewater[1]. This Order includes effluent limits and operating specifications to ensure this level of disinfection, including effluent limits for total coliform organisms (Effluent Limitations, Section IV.A.2.d), and operating specifications for the ultraviolet (UV) disinfection system (e.g., turbidity, UV dose, and UV transmittance) (Special Provisions, Section VI.C.4.a). Compliance with the effluent limits and operating specifications demonstrates compliance with the equivalency to Title 22 disinfection requirement.

[1] CCR 60301.230 defines "disinfected tertiary recycled water" as a disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater, and the effluent total coliform levels do not exceed 2.2 MPN/100 mL as a 7-day median or 23 MPN/100 mL more than once in a 30-day period.

Discharger Comment No. 7. Ultraviolet Disinfection Specifications and Tertiary Effluent Turbidity Limitations

The Discharger request that a requirement for a specific numerical UV dosage be eliminated from the permit. The Discharger suggests that it be replaced with a narrative specification such as, "The Facility must operate in accordance with operations and maintenance program that assures adequate disinfection." The Discharger also request that the corresponding turbidity requirements are changed to less than 2 NTU over a 24-hours period, less than 5 NTU for 5% of the time over a 24-hours period, and less than 10 NTU at all times.

RESPONSE: Central Valley Water Board staff does not concur. As discussed in response to Discharger Comment No. 6, the proposed Permit requires disinfection of the year-round discharge to a level equivalent to Title 22 disinfected tertiary recycled

water. This requirement is necessary to protect public health from contact with undiluted treated municipal wastewater. The proposed Permit includes effluent limits and operating specifications to ensure this level of disinfection, including effluent limits for total coliform organisms, and operating specifications for the ultraviolet (UV) disinfection system (e.g., turbidity, UV dose, and UV transmittance). Compliance with the effluent limits and operating specifications demonstrates compliance with the equivalency to Title 22 disinfection requirement.

UV Specifications. The National Water Research Institute (NWRI) and American Water Works Association Research Foundation NWRI/AWWRF's "Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse" first published in December 2000 and revised as a Second Edition dated May 2003 (NWRI Guidelines) includes UV operating specifications for compliance with Title 22 disinfected tertiary recycled water. For water recycling in accordance with Title 22, DPH requires that the UV system shall be an approved system included in the Treatment Technology Report for Recycled Water, December 2009 (or a later version, as applicable) published by the DPH. The UV system shall also conform to all requirements and operating specifications of the NWRI Guidelines. A Memorandum dated 1 November 2004 issued by DPH to Regional Water Board executive offices recommended that provisions be included in permits for water recycling treatment plants employing UV disinfection requiring Dischargers to establish fixed cleaning frequency of lamp sleeves, as well as, include provisions that specify minimum delivered UV dose that must be maintained (per the NWRI Guidelines).

The proposed Permit includes UV specifications for UV dosage, UV transmittance, and lamp cleaning/replacement in accordance with the NWRI Guidelines. These requirements are necessary for UV disinfection systems to ensure the facility adequately disinfects the wastewater for virus inactivation as required by Title 22. The Discharger requests that these specifications be removed from the proposed Permit and that compliance with the disinfection requirements be determined based on compliance with the total coliform effluent limits. Central Valley Water Board staff does not concur. Compliance with total coliform effluent limits alone does not ensure that pathogens in the treated municipal wastewater have been deactivated by the UV disinfection system. Compliance with both the effluent limits and the UV operating specifications is needed to demonstrate compliance with the equivalency to Title 22 disinfection requirement.

Since the UV specifications are based on the NWRI Guidelines, a reopener provision has been added to the proposed Permit to allow modification of the UV operation specifications in the event the Discharger conducts a site-specific UV Engineering study that demonstrates modified UV specifications will achieve the virus inactivation required by Title 22 for disinfected tertiary recycled water.

Turbidity Specifications. The Discharger requested relaxed turbidity specifications. Central Valley Water Board staff does not concur. The NWRI Guidelines and

Title 22[3] include turbidity specifications for membrane filtration and granular media filtration. The purpose of the turbidity specifications is to allow immediate identification of filter failure. Failure of the membrane filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher turbidity. Turbidity has a major advantage for monitoring membrane filter performance, allowing immediate detection of membrane filter failure and rapid corrective action.

Membrane filters provide a lower turbidity effluent than granular media filters, therefore, the NWRI Guidelines and Title 22 include different turbidity specifications for membranes and granular media filters, as shown below:

> ***Granular Media Filtration.*** *2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 10 NTU*
>
> ***Membrane Filtration.*** *0.2 NTU as a daily average; 0.5 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 1 NTU*

The proposed Permit appropriately includes the turbidity specifications for membrane filtration. It would not be appropriate to use the turbidity specifications for granular media filtration, because even at the daily average turbidity specification, the membranes would be experiencing complete failure, and the turbidity specifications would be meaningless.

Discharger Comment No. 8. Description of Land and reclamation Specification

The Discharger requests, for clarification purposes, that descriptions provided in Sections IV.F and IV.G of the Fact Sheet (page F-81 of Tentative Permit) for the current Land Discharge Specifications and Reclamation Specifications is also included into the main body of the Tentative Permit, specifically under paragraphs IV.B and IV.C on page 17 of the Tentative Permit.

RESPONSE: Central Valley Water Board staff reviewed and partially concurs with the Discharger's proposed modification. The purpose of the Fact Sheet is to provide additional information to describe, clarify, and discuss rationale for the permit requirements in the Limitations and Discharge Specifications. The extra detail on page F-81 of the Tentative Permit is not appropriate for the Limitations and Discharge Specifications of the proposed Permit. However, the following changes, as shown in underline/strikeout format, have been made in Sections IV.B and IV.C of the proposed Permit to provide clarification:

[3] CCR Section 60301.320

B. Land Discharge Specifications – Not Applicable

Land discharge specifications are included in separate Waste Discharge Requirements Order 99-112.

C. Reclamation Specifications – Not applicable

Reclamation specifications are included in separate Waste Discharge Requirements Order 99-112.

Discharger Comment No. 9. Minor Comments

The Discharger requested 19 minor changes to the Tentative Permit. Six were suggested specifically to the Limitations and Discharge Specifications, 7 to the MRP Section (attachment E), 4 to the Fact Sheet (attachment F), and 2 to the Effluent and Receiving water characterization Study (attachment I).

RESPONSE: Central Valley Water Board staff reviewed and agrees with the Discharger's suggested changes with the exception of the following:

a) Effluent Limitations Tables 6a and 6b—Tentative Permit, pages 12 and 14.

Comment: Add annual average effluent limitation columns for manganese, iron, and aluminum in Tables 6a and 6b and remove corresponding paragraphs f., g., and h. from Page 15.

Response: In the exiting NPDES template there is not a column heading in this table to add annual averages. The annual average effluent limits are specified in Sections IV.A.1. and IV.A.2.

b) Total Residual Chlorine —Tentative Permit, page 13

Comment: Add language to note that "compliance with these limits shall be determined according to Section VII.F."

Response: This change is unnecessary and has not been made in the proposed Permit.

c) pH – Clarify Language—Tentative Permit, page 18

Comment: Clarify the language as follows: "The pH to ~~be depressed~~ fall below 6.5 nor raised above 8.5."

Response: The receiving water limit for pH uses the specific language from the Basin Plan (page III.6.0). The current language more appropriately implements the Basin Plan water quality objective for pH.

d) Description of EFF-0001A in Table E-1— MRP page E-3

Comment: Change the description of EFF 001A "Effluent from Secondary Treatment Facility, by itself or in combination with Effluent from the Tertiary Treatment Facility."

Response: Monitoring locations for secondary (EFF-001A) and tertiary (EFF-001B) effluents are two different and separate locations. Staff cannot add this statement because the secondary and tertiary effluents have different requirements and must be monitored separately.

e) Heading IV: "Monitoring Location EFF-0001A" — MRP, page E-5

Comment: Change the Heading IV: "Monitoring Location EFF-001A" to "A. Monitoring Location EFF-001A (Secondary Effluent by itself or in combination with tertiary Effluent)"

Response: Staff cannot make this suggested change. See response to comment d) above.

f) Analytical Method for Chlorpyrifos and Diazinon— MRP, pages E-6 and E-7

Comment: Delete the specific analytical methods specified for chlorpyrifos and diazinon.

Response: The analytical method required in the proposed Permit for chlorpyrifos and diazinon is necessary to determine compliance with the effluent limits for these constituents. Therefore, the requested change cannot be made. However, an additional EPA Approved analytical method has been added to provide an acceptable alternative.

g) Reference to Dioxin and Furan Sampling Requirements—MRP page E-20

Comment: Top paragraph and footnote 1 in table immediately following – The reference to the Dioxin and Furan Sampling requirement should indicate Attachment J, not attachment I.

Response: Staff has addressed this suggestion by modifying Attachment I, Section 1.A.D. See response to comment h, below.

h) Dioxin and Furan Sampling Heading— Att I page I-9

Comment: Change the Heading to "Attachment J. Dioxin and Furan Sampling," consistent with Paragraph I.D on page I-1, which refers to the Dioxin and Furan Sampling in attachment J.

Response: Staff has addressed this comment by changing the reference in Attachment I, Section I.D. from Attachment J to Attachment I. Therefore, it is unnecessary to create a new Attachment J.

CSPA COMMENTS

Designated Status Request: CSPA requested designated party status for the Central Valley Water Board hearing scheduled for 7/8 June 2012 with regard to the proposed Permit for the City of Modesto Water Quality Control Facility (Facility). The commenter will be granted designated party status for the subject hearing.

CSPA Comment A. Tertiary Facility Expansion and CEQA Compliance

CSPA comments that the proposed Permit discusses that the Discharger is undertaking a major project to expand the capacity of its tertiary treatment system which will result in an increased flow to surface waters and the proposed permit simply states that the action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (CEQA). CSPA further comments that the permit should include a discussion of the wastewater treatment plant expansion and the resulting impacts to water quality identified in the CEQA document which must be prepared prior to allowing any such discharge.

RESPONSE: The action to adopt an NPDES permit is exempt from CEQA in accordance with California Water Code section 13389. The proposed Permit includes information regarding the facility expansions and evaluates the water quality impacts of the expanded discharge. A complete Antidegradation analysis was conducted that demonstrates the proposed action complies with the State Water Resources Control Board's Antidegradation Policy (Resolution 68-16). Some clarifying changes have been made to the proposed Permit, as follows:

Finding II.E discusses compliance with CEQA, and is modified as shown below in underline/strikeout format:

E. California Environmental Quality Act (CEQA). Under CWC section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.

<u>The Discharger's proposed treatment for phases 2 and 3 is similar to the completed Phase 1A process. A two-step membrane bioreactor (MBR) process includes an aerated activated sludge process and a membrane separation process. The MBR process is designed and operated to</u>

provide biological nutrient removal that nitrifies and denitrifies the wastewater. Ultraviolet (UV) light radiation disinfects the filtered wastewater prior to storage or discharge. The City developed a mitigated negative declaration in September 2010 for the Phase 2 Facility upgrades.

Section II.E of the Fact Sheet (Attachment F) provides a description of the proposed Facility upgrades. The second paragraph of Section II.E of the Fact Sheet (Attachment F) has been modified as follows in underline/strikeout format to describe the CEQA document developed by the Discharger:

E. Planned Changes

The City has planned for a three phase upgrade to construct tertiary facilities that would increase the year round tertiary discharge to 19.1 MGD. The seasonal 70 MGD secondary discharge will cease with completion of the Phase 2 tertiary facility upgrades scheduled for completion in May 2018. With Completion of Phase 2 upgrades the design capacity will increase to 14.9 MGD for the tertiary year-round discharge. There is no specific time frame for initiation of Phase 3 (19.1 MGD year-round discharge), which will depend on population growth. However, the City has conducted an Antidegradation analysis for the full build out and requested approval for the full Phase 3 build out discharge of 19.1 MGD for this permit renewal.

The City's proposed treatment for phases 2 and 3 is similar to the completed Phase 1A process. A two-step membrane bioreactor (MBR) process includes an aerated activated sludge process and a membrane separation process. The MBR process is designed and operated to provide biological nutrient removal that nitrifies and denitrifies the wastewater. Ultraviolet (UV) light radiation disinfects the filtered wastewater prior to storage or discharge. The City developed a mitigated negative declaration in September 2010 for the Phase 2 Facility upgrades.

CSPA Comment B. Mass-Based Effluent Limits for Aluminum, Carbon Tetrachloride, Chlorine, Copper, Dibromochloromethane Dichlorobromomethane, Iron, Manganese and Molybdenum.

CSPA comments that the proposed Permit fails to contain mass-based effluent limitations for Aluminum, Carbon Tetrachloride, Chlorine, Copper, Dibromochloromethane, Dichlorobromomethane, Iron, Manganese and Molybdenum as required by 40 CFR 122.45(b). CSPA comments that concentration is not a basis for design flow, and that mass limits are critically important to assure that the facility is properly designed and capable of removing individual pollutants and to assure that the treatment facilities are not overloaded with the individual pollutant. CSPA further

comments that the proposed Permit does not specify design flow and does therefore not comply with the requirements of the 40 CFR 122.45(b).

RESPONSE: The rationale for the establishment of mass-based effluent limitations is discussed in the Fact Sheet, Section IV.D.1. Federal Regulations at 40 CFR section 122.25(f) states the following:

> *"Mass limitations. (1) All pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass except:*
>
> *(i) For pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass;*
>
> *(ii) When applicable standards and limitations are expressed in terms of other units of measurement; or*
>
> *(iii) If in establishing permit limitations on a case-by-case basis under §125.3, limitations expressed in terms of mass are infeasible because the mass of the pollutant discharged cannot be related to a measure of operation (for example, discharges of TSS from certain mining operations), and permit conditions ensure that dilution will not be used as a substitute for treatment.*
>
> *(2) Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations."*

40 CFR section 122.25(f)(1)(ii) states that mass limitations are not required when applicable standards are expressed in terms of other units of measurement. The numerical effluent limitations for Aluminum, Carbon Tetrachloride, Chlorine, Copper, Dibromochloromethane, Dichlorobromomethane, Iron, Manganese and Molybdenum in the proposed Permit are based on water quality standards and objectives. These are expressed in terms of concentration. Pursuant to 40 CFR section 122.25(f)(1)(ii), expressing the effluent limitations in terms of concentration is expressly allowed and is in no way contrary to Federal Regulations.

The proposed Permit includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

CSPA Comment C. Annual Average Effluent Limitations for Manganese, Iron and Aluminum.

CSPA comments that the proposed permit establishes Effluent Limitations for aluminum, iron and manganese as an annual average, which is contrary to the federal Regulations at 40 CFR 122.45 (d)(2), which require that permits for POTWs establish Effluent Limitations as average weekly and average monthly unless impracticable. CSPA comments that the Regional Board has not presented any evidence that properly and legally limiting aluminum, iron and manganese is impracticable.

RESPONSE: Central Valley Water Board staff does not concur. The effluent limitations for aluminum, iron and manganese are based on the Department of Public Health's Secondary Maximum Contaminant Levels (MCLs); therefore, the proposed Permit includes annual average effluent limitations for these constituents. Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. For Secondary MCLs, Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. Since water that meets these requirements on an annual average basis is suitable for drinking, it is impracticable to calculate average weekly and average monthly effluent limitations because such limits would be more stringent than necessary to protect the MUN beneficial use. Central Valley Water Board staff has determined that an averaging period similar to what is used by California Department of Public Health for those parameters regulated by Secondary MCLs is appropriate, and that using shorter averaging periods is impracticable because it sets more stringent limits than necessary.

CSPA Comment D. Effluent Limitations for Chronic Toxicity

CSPA comments that the proposed Permit does not contain enforceable Effluent Limitations for chronic toxicity and therefore does not comply with the Basin Plan, Federal Regulations, at 40 CFR 122.44 (d)(1)(i) and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP).. CSPA comments that the Proposed Permit contains a narrative Effluent Limitation prohibiting the discharge of chronically toxic substances: however a Compliance Determination has been added to the Tentative Permit, page 25, 26 and 38: Compliance with the accelerated monitoring and toxicity reduction evaluation (TRE) specifications of Provision VI.C.2.a shall constitute compliance with effluent limitations. The Compliance Determination nullifies the Effluent Limitation and makes toxic discharges unenforceable. CSPA comments that an enforceable effluent limitation for chronic toxicity must be included in the Permit.

RESPONSE: Central Valley Water Board staff does not concur. The effluent limitation, special provision, and compliance determination requirement for chronic whole effluent toxicity (WET) are in accordance with State Water Resources Control Board (State Water Board) WQO 2003-0012 (Los Coyotes and Long Beach) and

WQO 2008-0008 (City of Davis). In these water quality orders, the State Water Board requires the following when a discharge has reasonable potential to cause or contribute to an exceedance of the narrative toxicity objective based on chronic WET testing:

a) a chronic WET narrative limit;

b) chronic WET numeric benchmarks for triggering accelerated monitoring;

c) rigorous toxicity reduction evaluation/toxicity identification evaluation conditions.

The proposed Permit contains these requirements and fully complies with the State Water Boards' water quality orders.

CSPA Comment E. Compliance Schedules for Electrical Conductivity (EC)

CSPA comments that the proposed Permit contains Compliance Schedules for EC that exceed the maximum ten years allowed under the Basin Plan and fails to allocate a maximum allowable load as required for 303d listed pollutants. CSPA comments that The Basin Plan, page IV-17-00, for the Sacramento and San Joaquin Rivers allows for maximum compliance schedules to be included in NPDES permits where it is infeasible to achieve immediate compliance. The previous NPDES permit, Order R5-2008-0059 contained a compliance schedule for achieving compliance with effluent limitations for electrical conductivity (EC). Therefore, the maximum allowable compliance period of ten years should expire in 2018. The Tentative Permit, page 33, allows a continuing compliance schedule until 2022 or 2026, clearly beyond 2018 as is allowed under the Basin Plan.

RESPONSE: The State Water Board adopted the Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits (Resolution 2008-0025), which is the governing Policy for compliance schedules in NPDES permits. The State Water Board's Compliance Schedule Policy requires that compliance schedules are as short as possible and may not exceed 10 years, except when *"…a permit limitation that implements or is consistent with the waste load allocations specified in a TMDL that is established through a Basin Plan amendment, provided that the TMDL implementation plan contains a compliance schedule or implementation schedule.*"

The Lower San Joaquin River for Salt and Boron Salt and Boron TMDL was adopted through a Basin Plan amendment and is applicable to the discharge. The Basin Plan states that, "*Existing NPDES point source dischargers are low priority and subject to the compliance schedules for low priority discharges in Table IV-4.3.*" The TMDL for the Lower San Joaquin River for Salt and Boron requires that POTWs comply with the water quality objectives for EC by 28 July 2022, for wet through dry

years and 28 July 2026 for critical years (Basin Plan, Section 19, Table IV-4.3, pg IV-32.03).

Clarifying changes have been made to the Fact Sheet (Section VII.B.7.b) to better describe the Basin Plan Compliance schedules for electrical conductivity as shown below in underline/strikeout format:

a. **Compliance Schedule for Final Effluent limitations for Electrical Conductivity.** On 30 January 2012, the Discharger submitted a compliance schedule justification for Electrical Conductivity and requested continuation of the compliance schedule allowed in previous Order R5-2008-0059-01. The compliance schedule justification included all items specified in the State Water Board's Compliance Schedule Policy. The Basin Plan states that, "Existing NPDES point source dischargers are low priority and subject to the compliance schedules for low priority discharges in Table IV-4.3." The TMDL requires that POTWs comply with the water quality objectives for EC by 28 July 2022, for wet through dry years and 28 July 2026 for critical years (Basin Plan, Section 19, Table IV-4.3, pg IV-32.03). The Discharger shall comply with a time schedule to ensure compliance with the final effluent limitations for Electrical Conductivity, in accordance with the Salinity and Boron TMDL. Final compliance is required by 28 July 2022, for wet through dry years and 28 July 2026 for critical years.

   Since the reduction in effluent salinity is a complex issue that may require the development of new lower salinity water supplies or other long-term solutions, the compliance schedule is reasonable and necessary. Consistent with the Central Valley Water Board's recommendations, this Order requires the Discharger to continue implementation of the salinity source control program ~~submitted by the Discharger on XXXX.~~ This Order also contains interim performance based effluent limitations for EC.

CSPA Comment F. Compliance with and the Receiving Water Limitation for Toxicity

CSPA comments that the proposed Permit fails to assess compliance and require compliance with and the Receiving Water Limitation for Toxicity, which is based on the Basin Plan narrative toxicity water quality objective. CSPA comments that at a minimum, the proposed Permit should include a requirement for a study of the presence of constituents of emerging concern (CECs) in the wastewater discharge, the receiving stream and in agricultural intakes within the proposed mixing zone and the effectiveness of different treatment technologies to remove CECs. The report should be made available to the public. At a time when the proposed Permit will likely require advanced treatment systems to be designed and constructed; investigating the technologies that are capable of removing CECs would make sense economically and environmentally

RESPONSE: Central Valley Water Board staff does not concur. Central Valley Water Board staff is engaged with the scientific community to study and document impacts to water quality. When new defensible scientific information is developed, Central Valley Water Board staff incorporates this information into our proposed permits. The Fact Sheet within the tentative Permit details the scientific studies, and the Central Valley Water Board staffs' analysis, evaluations, and determinations conducted pollutant by pollutant to determine whether or not concentrations are discharged at levels that cause, have reasonable potential to cause, or contribute to an in-stream excursion above any water quality standard. For the most part, the data used was obtained during the term of previous Order R5-2008-0059-01. Additionally, Central Valley Water Board staff considered the nature of the Facility's operations and scientific studies conducted by the Discharger's consultants or by an independent scientific review to determine if the discharge demonstrates reasonable potential to exceed applicable water quality criteria or objectives. Using the method prescribed in Section 1.3 of the SIP, or other USEPA recommended reasonable potential analysis (RPA) methods, Central Valley Water Board staff compared this data for each pollutant with the applicable water quality objectives in the Basin Plan or water quality criteria from USEPA, and the CTR. Based on these analyses, the tentative Permit includes several mechanisms to protect the beneficial uses of the receiving water.

In addition, the tentative Permit includes acute and chronic whole effluent toxicity (WET) testing conducted on the most sensitive of species to determine whether the effluent discharge causes adverse effects to the beneficial uses of the receiving water. Moreover, when new defensible, scientific information is developed, the tentative Permit contains a reopener for the Central Valley Water Board staff to incorporate this information into our permits, and modify or amend the waste discharge requirements as appropriate.

CSPA Comment G. Mixing Zone Requirements

CSPA comments that the Tentative Permit contains an allowance for a mixing zone that does not comply with the requirements of Federal Regulation 40 CFR Section 131.12 (a)(1) and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) or the Basin Plan. Specifically, CSPA comments that the Tentative Permit does not specify the boundaries of the mixing zones.

RESPONSE: Central Valley Water Board staff agrees that the Discharger did not provide information in its mixing zone study to establish the boundaries of the mixing zone for long-term criteria. Consequently, the Tentative Permit required an updated mixing zone study to provide this information. As part of its comments, however, the Discharger submitted an update to its mixing zone study that identifies the boundaries of the mixing zones for constituents with long-term criteria. The

proposed Permit has been modified to identify the boundaries of the mixing zones based on this new information. In addition, the requirement to submit an updated mixing zone study has been removed from the proposed Permit.

CSPA Comment H. Effluent Limitations for Metals Based on Effluent Hardness

CSPA comments that the proposed Permit establishes effluent limitations for metals based on the hardness of the effluent and the downstream hardness as opposed to the ambient in stream receiving water hardness and fails to use the mandated equations as required by Federal Regulations, the California Toxics Rule (CTR, 40 CFR 131.38(c)(4)). CSPA also comments that the Central Valley Water Board failed to use the lowest observed, most protective, in-stream ambient hardness.

Response: CSPA contends that the proposed Permit establishes effluent limits for CTR metals based on the incorrect hardness. CSPA has five main arguments:

a) Effluent hardness cannot be used in any way to establish CTR criteria;
b) The wrong equations were used to calculate the CTR criteria;
c) The "ambient" Hardness was not used;
d) The "Emerick" paper cannot be used; and
e) The wrong method is used for establishing a protective limitation.

a) Effluent hardness cannot be used in any way to establish CTR criteria;

The proposed Permit establishes the CTR hardness-dependent metals criteria based on the reasonable worst-case downstream ambient hardness in accordance with the CTR and the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP), and is consistent with the guidance provided by the State Water Resources Control Board (State Water Board) in WQO 2008-0008 (City of Davis).

The methodology for calculating effluent limits for metals with CTR hardness dependent criteria described in the proposed Permit establishes the criteria based on the reasonable worst-case downstream ambient hardness and ensures these metals in the discharge do not cause receiving water toxicity under any downstream receiving water condition. Under the methodology, all hardness conditions that could occur in the ambient downstream receiving water after the effluent has mixed with the water body were considered. The proposed effluent limitations are fully protective of aquatic life in all areas of the receiving water affected by the discharge under all flow conditions, at the fully mixed location, and throughout the water body including at the point of discharge into the water body.

The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 CFR § 131.38(c)(4)) The CTR does not define whether the term "ambient," as

applied in the regulations, necessarily requires the consideration of upstream or downstream hardness conditions.

In Order WQ 2008-0008, the State Water Board concluded that regional water boards have considerable discretion in determining ambient hardness as long as the hardness values are protective under all flow conditions. (Order WQ 2008-0008, pp. 10-11.)[4]

CSPA continues to state that only the effluent hardness was considered in the development of the CTR metals effluent limits. This is incorrect. The proposed Permit clearly demonstrates that the reasonable worst-case downstream hardness has been used to calculate the criteria. This is shown in Tables F-4 and F-5 of the Tentative Permit. These tables demonstrate that discharge in accordance with the proposed effluent limits for the CTR metals do not cause an exceedance of the CTR criteria in the receiving water. The tables show the fully mixed hardness and metals concentrations downstream of the discharge for all possible flow conditions (i.e., high receiving water flow conditions to the effluent-dominated condition, which can occur at the point of discharge before mixing with the receiving water).

b) The wrong equations were used to calculate the CTR criteria;

CSPA also contends that the incorrect equations were used to calculate the CTR criteria. This contention is directed at the equation for calculating the ECA for Concave Up Metals (i.e., Equation 4 in the proposed Permit). Central Valley Water Board staff does not concur. Equation 4 is not used in place of the CTR equation. Rather, Equation 4 is used in place of iteratively determining the reasonable worst-case downstream hardness to use in the CTR equation. Equation 4, which is derived using the CTR equation, is used as a direct approach for calculating the ECA that is always protective considering the reasonable worst-case conditions in the receiving water (i.e., reasonable worst-case downstream hardness). The CTR equation has been used to evaluate the receiving water downstream of the discharge at all discharge and flow conditions to ensure the ECA calculated using Equation 4 is protective. For example, this is shown in Table F-8 of the proposed Permit, and included below for convenience.

[4] This includes, for example, using different receiving water hardness values for wet and dry conditions (*Ibid*, p. 10), using upstream receiving water hardness (*Ibid*, p. 10), or using downstream receiving water mixed hardness (*Ibid*, p. 11).

Table F-8: Lead ECA Evaluation for the Secondary Effluent[5]

Lowest Observed Effluent Hardness	**136 mg/L**
Reasonable Worst-case Upstream Receiving Water Hardness	**400 mg/L**
Reasonable Worst-case Upstream Receiving Water Lead Concentration	**18.6 µg/L[1]**
Lead $ECA_{chronic}$[2]	**2.97 µg/L**

Effluent Fraction[6]		**Fully Mixed Downstream Ambient Concentration**			
		Hardness[3] (mg/L) (as $CaCO_3$)	**CTR Criteria[4] (µg/L)**	**Lead[5] (µg/L)**	**Complies with CTR Criteria**
High Flow	1%	397.4	18.4	18.4	**Yes**
	5%	386.8	17.8	17.8	**Yes**
	15%	360.4	16.3	16.2	**Yes**
	25%	334.0	14.8	14.7	**Yes**
	50%	268.0	11.2	10.8	**Yes**
	75%	202.0	7.8	6.9	**Yes**
Low Flow	100%	136.0	4.7	3.0	**Yes**

1 Reasonable worst-case upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a worse case upstream hardness of 400 mg/L.

2 ECA calculated using Equation 4 for chronic criteria.

3 Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.

4 Fully mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

5 Fully mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction.

6 The effluent fraction ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

c) The "ambient" Hardness was not Used;

CSPA believes ambient should be defined as the receiving water surrounding the effluent. This is not logical, because the CTR criteria are designed for protection of aquatic life in the receiving water, regardless of whether there is a wastewater effluent discharge or not. The fact that a wastewater discharge is present does not eliminate the Clean Water Act requirement to protect beneficial uses. The reasonable definition of the term "ambient," as applied in the CTR to ensure protection of aquatic life, is that "ambient" refers to the surface water surrounding the aquatic life.

[5] For lead, it is necessary to consider the highest and lowest observed upstream receiving water hardness. The reasonable worst-case condition is when the highest observed upstream hardness (i.e., 400 mg/L as $CaCO_3$) is used, which results in an ECA of 2.97 µg/L for lead. Using the lowest observed upstream receiving water hardness (i.e., 48 mg/L as $CaCO_3$) results in an ECA of 4.17 µg/L.

CSPA seems to make this argument to make the case that the upstream receiving water hardness should be used. When there is a wastewater effluent discharge, it is absolutely necessary to consider the effluent hardness when evaluating the CTR criteria downstream of the discharge. The effluent discharges both metals and hardness. It is not possible to discharge one without the other. Simply ignoring the effluent hardness could result in toxicity downstream of the discharge. CSPA states, however, that, "*The wastewater effluent is not 'surface water'.*", and cannot be considered, per the CTR. On the contrary, once a wastewater effluent is discharged to a receiving water it becomes the surface water and all beneficial uses must be protected. The CTR states that, "…*the criteria apply throughout the water body including at the point of discharge into the water body*." CTR criteria are receiving water criteria, that apply upstream and downstream of wastewater discharges, even at the point of wastewater discharges. Therefore, it is clear that once a wastewater effluent is discharged to a receiving water, it becomes part of the surface water. Ignoring the effects of the wastewater effluent hardness could result in toxicity in the receiving water.

CSPA further provides a discussion of the biological opinion from the US Fish and Wildlife Service and National Marine Fisheries Service on the promulgation of the CTR. Because the biological opinion was submitted on the proposed CTR rulemaking, US EPA would have considered the specific comment in the development of the final rulemaking of the CTR. Therefore, these comments by CSPA are directed at the CTR, not the tentative Permit, which must comply with the final CTR and SIP. Central Valley Water Board staff properly applied the SIP and CTR when establishing WQBELs for the CTR metals with hardness dependent criteria.

d) The "Emerick" paper cannot be used

CSPA contends that use of the 2006 Study is inappropriate because it does not utilize the hardness of the surface water, does not use the CTR equations, and ignores other water quality parameters that affect the toxicity of metals. Central Valley Water Board staff do not concur. As discussed above, the effluent limits in the proposed Permit are not based solely on the effluent hardness. They are based on the reasonable worst-case downstream ambient hardness, and consider the effect of the effluent hardness on the receiving water. This is consistent with the SIP, CTR, and the Davis Order, and is entirely appropriate. Also discussed above, the 2006 Study utilizes the CTR equations to establish the CTR hardness-dependent metals criteria.

Finally, CSPA's contention regarding the use of only hardness, and ignoring other water qualities that affect metal toxicity (e.g., pH, alkalinity, dissolved organic carbon, calcium, sodium, chloride, etc.), to establish the CTR criteria is misplaced. As CSPA commented, US EPA has also released a Clean Water Act section 304 criteria document for copper based on the Biotic Ligand Model (*Aquatic Life Ambient Freshwater Quality Criteria—Copper 2007 Revision*) (BLM). The criteria document is

a non-regulatory scientific assessment intended as guidance only. (*Id.,* Foreward, p. iii.) Thus, the BLM cannot be used in developing WQBELs in NPDES permits; an EPA-approved Basin Plan or SIP amendment allowing adjustment of the established criteria must be completed, or US EPA must change the CTR. Therefore, these comments by CSPA are directed at the CTR, not the tentative Permit, which must comply with the final CTR and SIP. CSPA's contention is with regard to the CTR, not the proposed Permit. The Central Valley Water Board is required to implement the CTR and SIP, which for the hardness-dependent metals, means using hardness to establish the CTR criteria.

e) Establishing a Protective Limitation.

CSPA contends that "*For the great majority of wastewater discharges to surface waters the hardness of the effluent is much greater than the hardness or the upstream surface water. In such cases, use of the higher hardness of the effluent to calculate discharge limitations for hardness dependent metals results in significantly less stringent discharge limitations.*" The Emerick method properly implements the CTR, by using the reasonable worst-case downstream ambient hardness to calculate the CTR criteria. As stated above, this is consistent with the CTR, SIP, as well as the Davis Order, which is applicable to this discharge.

CSPA also comments that "*It has been questioned whether the Regional Board's default use of the "Emerick" method constitutes an underground regulation. 'Regulation' means every rule, regulation, order, or standard of general application or the amendment, supplement, or revision of any rule, regulation, order or standard adopted by any state agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure." (Government Code section 11342.600).*"

In June 2009, CSPA requested the Office of Administrative Law to issue an opinion finding the "Emerick" method to be an underground regulation. The Office of Administrative Law rejected CSPA's claim, and declined to issue an opinion.

CSPA Comment I. Incorrect Effluent Limitations for Aluminum

CSPA comments that the proposed Permit fails to contain an Effluent Limitation for aluminum in accordance with Federal Regulations 40 CFR 122.44, US EPA's interpretation of the regulation, and California Water Code, Section 13377. CSPA further comments that the recommended ambient criteria four-day average (chronic) of 87 µg/l is applicable to the discharger.

RESPONSE: CSPA comments that the proposed Permit fails to include effluent limits for aluminum in accordance with federal regulations. Central Valley Water Board staff does not concur. The proposed Permit includes average monthly, maximum daily, and annual average effluent limits for aluminum. As discussed on

page F-43 of the Tentative Permit, the Central Valley Water Board finds that the discharge has reasonable potential to cause or contribute to an instream excursion of the applicable water quality objectives for aluminum in the receiving water. Consequently, in accordance with Federal Regulations 40 CFR 122.44, the proposed Permit includes water quality-based effluent limits for aluminum.

CSPA also contends that USEPA National Recommended Ambient Water Quality Criteria (NAWQC) for aluminum should be used to interpret the Basin Plan's narrative toxicity objective, specifically the chronic (4-day average) criterion of 87 µg/L. Central Valley Water Board staff does not concur. The chronic criterion recommended by USEPA's NAWQC for aluminum is not applicable to the receiving water and is overly stringent.

The Code of Federal Regulations promulgated criteria for priority toxic pollutants for California's surface waters as part of section 131.38 Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (California Toxics Rule or CTR), including metals criteria. Freshwater aquatic life criteria for metals are expressed as a function of total hardness. However, aluminum criteria were not promulgated as part of the CTR. Absent numeric aquatic life criteria for aluminum, WQBEL's in the Central Valley Water Board's NPDES permits are based on the Basin Plan's narrative toxicity objective.

The Basin Plan's Policy for Application of Water Quality Objectives requires the Central Valley Water Board to consider, "*on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations. In considering such criteria, the Board evaluates whether the specific numerical criteria which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective.*" Relevant information includes, but is not limited to the following: (1) USEPA Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses, (2) USEPA National Recommended Ambient Water Quality Criteria (NAWQC), (3) NAWQC–Correction, and (4) site-specific aluminum studies conducted by dischargers within the Central Valley Region. (Basin Plan, p. IV.-17.00; see also, 40 CFR 122.44(d)(vi).)

For aluminum, the proposed Permit implements the Basin Plan's narrative toxicity objective and the narrative chemical constituents objective for protection of the aquatic life and domestic and municipal supply beneficial uses. USEPA developed NAWQC for protection of freshwater aquatic life for aluminum (1988). The recommended 4-day average (chronic) and 1-hour average (acute) criteria for aluminum are 87 µg/L and 750 µg/L, respectively, for waters with a pH of 6.5 to 9.0. The NAWQC can be used to implement the Basin Plan's narrative toxicity objective. In addition, the Secondary Maximum Contaminant Level - Consumer Acceptance

Limit for aluminum is 200 µg/L, which implements the Basin Plan's narrative chemical constituent's objective.

In April 1999, USEPA released the National Recommended Water Quality Criteria–Correction. There were no corrections to the 1988 aluminum recommended criteria; however, USEPA recognized that they were aware of field data indicating that many high quality waters in the U.S. contain more than 87 µg/L aluminum, when either total recoverable or dissolved is measured (i.e., the higher levels of aluminum did not affect beneficial uses). Therefore, Footnote L to the National Recommended Ambient Water Quality Criteria summary table for aluminum indicated a water effects ratio (WER) might be appropriate for implementation of its recommended chronic criterion for aluminum to protect aquatic organisms. (National Recommended Water Quality Criteria–Correction (April 1999).) USEPA explained that the chronic aquatic life criterion is based on studies (USEPA 1988, Table 5-6, "Other Data on Effects of Aluminum on Aquatic Organisms"), conducted under specific receiving water conditions with a low pH (6.5 to 6.8 pH units) and low hardness (<10 mg/L as $CaCO_3$) using the test species brook trout (*Salvelinus fontinalis*) and striped bass (*Morone saxatilis*).

Although striped bass may be present in the receiving water in the vicinity of the discharge, monitoring data demonstrates that the study conditions are not similar to those in San Joaquin River, which consistently has a higher hardness, ranging from 48 to 450 mg/L and higher pH, ranging from 7.0 to 8.9 standard units. Because the hardness in the San Joaquin River are higher (which decreases the toxic effects to aquatic life) than the water hardness values in which the criterion was developed, USEPA advises that a water effects ratio (WER) might be appropriate to better reflect the actual toxicity of aluminum to aquatic organisms.

In April 2005, the Discharger completed a Phase I WER Study for aluminum, and on 11 November 2005, submitted the results in its *Aluminum Water-Effect Ratio Study Plan*. The Phase I WER study consisted of range-finding toxicity tests, in which the NOEC, LOEC, and EC_{50}[6] were determined for the species *Daphnia magna, Ceriodaphnia dubia,* and Rainbow Trout. For this initial range-finding test, side-by-side testing with laboratory water was not conducted. However, to obtain an estimate of the potential WER for the Modesto WQCF effluent, the EC_{50} values determined for the site water were divided by the Species Mean Acute Value (SMAV) available in the aluminum criteria document according to EPA's streamlined WER procedure[7]. According to the EPA streamlined procedure, two WERs are determined by dividing site water WERs with both the laboratory dilution water EC_{50} and the SMAV; the final WER of the sample is the lesser of the two. The estimated WERs calculated using the SMAVs are presented in the table below:

[6] The NOEC is the "no observed effect concentration", the LOEC is the "lowest observed effect concentration", and the EC_{50} is the concentration that caused an effect to 50% of the test organisms.
[7] USEPA. 2001. Streamlined Water-Effect Ratio Procedure for Discharges of Copper. Office of Water. EPA-822-R-01-005. March.

Species	Site Water EC_{50} for Total Al (ug/L)	SMAV (ug/L Al)	WER
Daphnia magna	31604	38.2	827
Ceriodaphnia dubia	>11900[1]	1.9	6263
Rainbow Trout	>34250[1]	10.39	3296

[1] The 2001 EPA streamlined procedures states that a "greater than" value for the EC_{50} in the site water is interpreted as "equal to" in calculating the WER.

The Modesto Phase I WER study is not sufficient to calculate a WER, however, the preliminary results confirm the conditions of San Joaquin River are not similar to the EPA study conditions for the development of the USEPA recommended chronic criterion. The chronic criterion is overly stringent and is not appropriate to use to interpret the Basin Plan's narrative toxicity objective.

In addition, on 12 April 2007, the City of Manteca completed a Phase II aluminum WER study for the San Joaquin River near its discharge point, which is downstream of the City of Modesto. The Manteca Phase II WER study, which may be used to calculate a WER for the City of Manteca's discharge, indicated that a WER of 22.7 can be applied to the chronic criterion for aluminum (resulting in a chronic criterion of 22.7 x 87 µg/L = 1975 µg/L). Since the characteristics of the river (e.g. hardness and pH) near Manteca are similar to those near Modesto, the results of the Manteca WER study put into question the applicability of the overly stringent chronic criterion recommended by the NAWQC for aluminum.

Based on best professional judgment considering the site-specific conditions of the receiving water (e.g., hardness and pH), the Modesto Phase I WER Study, and the Manteca Phase II WER Study, the Central Valley Water Board finds that the NAWQC chronic criterion for aluminum is overly stringent and should not be used to interpret the narrative toxicity objective for this discharge. Therefore, the USEPA's NAWQC acute criterion for the protection of freshwater aquatic life, and the Department of Public Health's secondary Maximum Contaminant Level for aluminum were used to determine reasonable potential and calculate the final effluent limits for aluminum.

CSPA Comment J. Anti-Backsliding Requirements

CSPA comments that the proposed Permit contains Effluent Limitations less stringent than the existing permit contrary to the Antibacksliding requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (l)(1). CSPA further comments that the Central Valley Water Board's use of limited data to conduct reasonable potential analyses is not "new" information as required for backsliding and is contrary to 40 CFR 122.44(d) as interpreted by US EPA and the SIP.

RESPONSE: Central Valley Water Board staff does not concur. Section IV.D.4 of the proposed Permit clearly addresses the Antibacksliding issues for this permit renewal, for all applicable constituents, including Aluminum, Ammonia, Carbon tetrachloride, Dibromochloromethane, Nitrate (as N), and Selenium.

For Aluminum, Ammonia, Carbon tetrachloride, and Dibromochloromethane, some effluent limits have changed from the previous permit. However, the effluent limits are not less stringent. In these cases, the waste load allocations (WLA)[8] in the proposed Permit and current permit are identical. The WLA provides a definition of effluent quality that is necessary to meet the water quality standards of receiving water and is used to derive water quality-based effluent limits (WQBELs) that are used to enforce the WLA.

The TSD warns that, "*Direct use of a WLA as a permit limit creates a significant risk that the WLA will be enforced incorrectly, since effluent variability and the probability basis for the limit are not considered specifically.*" (TSD, p. 96) The SIP and TSD include identical procedures for calculating water quality-based effluent limits that use the statistical variability of the effluent to convert the WLA to average monthly and maximum daily effluent limits.

The new effluent data used to calculate WQBELs for the proposed Permit has different statistical variability (i.e., coefficient of variation is different) than used in the current Order. Changes in the coefficient of variation can result in small changes to the effluent limits. However, the slight changes in effluent limits do not allow for an increase in the pollutants discharged. The TSD states, "*Since effluents are variable and permit limits are developed based on a low probability of exceedence, the permit limits should consider effluent variability and ensure that the requisite loading from the WLA is not exceeded under normal conditions. In effect then, the limits must "force" treatment plant performance, which, after considering acceptable effluent variability, will only have a low statistical probability of exceeding the WLA and will achieve the desired loadings.*" (TSD, p. 97) Therefore, although there are slight differences in the effluent limits, the WLA are identical, so the level of treatment needed to maintain compliance with the effluent limits remains the same. Consequently, the effluent limits are not less stringent than the current permit, and there is no backsliding.

The WQBELs for Aluminum, Ammonia, Carbon tetrachloride, and Dibromochloromethane were calculated based on the last three years of seasonal secondary effluent data (February 2009 to March 2011). This is the same dataset used to conduct the reasonable potential analysis (RPA) for Nitrate (as N) and Selenium. Based on the RPA, the proposed Permit does not carry forward the effluent limits for Nitrate (as N) and Selenium, because there is no longer reasonable potential for the discharge to cause or contribute to an exceedance of the applicable water quality objectives. CSPA contends that this dataset is too limited and is not adequately representative of the discharge. Central Valley Water Board staff does not concur. This dataset is representative of the Facility improvements and required

[8] The WLA is equivalent to the Effluent Concentration Allowance used in the SIP (Section 1.4) for water quality-based effluent limit calculations.

monitoring frequency to meet the existing effluent limits. Therefore, Central Valley Water Board staff considers the last three years of seasonal secondary effluent data to be the most representative and reliable dataset to use to determine current facility performance to conduct the RPA and for derivation of WQBELs.

Section IV.D. 3 of the Fact Sheet has been modified to clarify the antibacksliding findings.

CSPA Comment K. Antidegradation Analysis

CSPA comments that the proposed Permit fails to contain an adequate antidegradation analysis that complies with the requirements of section 101(a) of the Clean Water Act, Federal Regulations 40 CFR 131.12, the State Board's Antidegradation Policy (Resolution 68-16) and California Water Code (CWC) Sections 13146 and 13247. CSPA makes the following assertions regarding the Antidegradation Analysis:

a) There is nothing resembling an economic or socioeconomic analysis
b) There is nothing resembling an analysis that ensures exiting beneficial uses are protected

RESPONSE: Central Valley Water Board staff does not concur. The Discharger conducted a complete Antidegradation Analysis that satisfactorily addresses the requirements of the Antidegradation Policy (Resolution 68-16) and Federal Regulations 40 CFR 131.12. Section IV.D.5 of the proposed Permit clearly addresses the Antidegradation issues for this permit renewal. Furthermore, the Discharger's Antidegradation Analysis study was posted on the Central Valley Water Board's internet website for review by interested parties.

a) ***Socioeconomic Analysis*** – CSPA comments that the proposed Permit does not contain a socioeconomic analysis. Central Valley Water Board staff does not concur. The Discharger's Antidegradation Analysis study included a socioeconomic evaluation that provided an in-depth analysis of: 1) cost and benefits, 2) socio-economic impacts of alternatives for maintaining existing water quality, and 3) balance of environmental benefits and socio-economic considerations. The Antidegradation Analysis Study also provided results from modeling of the economic impacts on the community.

   Given the current infrastructure, future development in the City of Modesto and surrounding communities, would rely on the Discharger and its Facility for wastewater collection, treatment, and recycled water services. The plant expansion of 14.3 mgd and increase surface water discharge would accommodate planned and approved growth. Should the minor incremental changes in San Joaquin River water quality be disallowed, such action would: (1) force future developments in the Discharger's service area to find alternative methods for disposing of wastewater; (2) require adding a reverse-osmosis

treatment processes to a significant portion of flow, and possibly other plant upgrades, to eliminate the small water quality changes; or (3) prohibit planned and approved development within and adjacent to the Discharger's service area. On balance, allowing the minor degradation of water quality is in the best interest of the people of the area and the state, compared to these other options; and is necessary to accommodate important economic or social development in the area.

b) ***Beneficial Use Protection*** – CSPA comments that the proposed Permit does not contain an analysis that ensures exiting beneficial uses are protected. Central Valley Water Board staff does not concur. Based on the findings of the Discharger's Antidegradation Analysis Study, considering the elimination of the seasonal secondary discharge, the increase in year-round tertiary discharge would have minimal impact on the near-field and far-field water quality of the San Joaquin River with respect to chemical constituents and dissolved oxygen. The analysis demonstrates the proposed project would have an overall favorable impact on water quality in the receiving waters downstream of the Facility, and that the water quality necessary to protect beneficial uses would be maintained. Some constituents in the receiving water exceed water quality objectives, but it is not caused by the discharge. "*The near-field water quality impact assessment also shows exceedance of the aluminum, iron, manganese, and EC water quality objectives in the receiving water. However, these exceedances are the result of the ambient levels of these four parameters already exceeding water quality standards upstream of the WQCF discharge. The WQCF discharge acts to slightly decrease downstream concentrations of these four parameters compared to their upstream concentrations. All other near- and far-field constituents considered in this report are expected to exhibit, at worst, only very minor increases in concentration in the receiving water at well-mixed conditions downstream of the discharge. They are not projected to exceed relevant water quality objectives, and on average are estimated to be present at concentrations well below objectives.*" (pg. ES-2, Antidegradation Analysis Study)

CSPA also contends that the Antidegradation Analysis should have analyzed impacts within the mixing zone, does not discuss antibacksliding or use of a limited dataset for determining reasonable potential. Central Valley Water Board staff does not concur.

Mixing zones do not violate state or federal Antidegradation policies. (Attwater memo, p. 2; *EPA Water Quality Standards Handbook* 2d., §§ 4.4, 4.4.4, and Appendix G (Questions and Answers), p. 2.) Water quality standards are not required to be met within mixing zones. An antidegradation analysis is not required for areas within a mixing zone, as long as the requirements of the mixing zone policy are met. (*American Wildlands v. Browner* (10th Cir. 2001) 260 F.3d 1192, 1195-1196, 1198.) Only a "simple" antidegradation analysis is required for a mixing zone under the State Water Board Guidance. A "simple" antidegradation analysis consists of a finding that the mixing zone will not be adverse to the purpose of the state and

federal antidegradation policies. (Attwater memo, p. 2.) The antidegradation findings in Section IV.D.4 of the Fact Sheet have been updated to state this. As discussed in Response to CSPA Comment G, above, and in the proposed Permit (Fact Sheet, Section IV.C.2.c.) the mixing zone meets all requirements of the Basin Plan and the SIP.

See response to CSPA Comment J regarding antibacksliding and the dataset used in the reasonable potential analysis.

CSPA Comment L. Certified Labs

CSPA comments that the proposed Permit fails to require that all environmental analyses be conducted at certified laboratories as required by CWC 131176 and CWC 13383.

RESPONSE: Central Valley Water Board staff does not concur. It is not factually or legally possible for the Discharger to comply with the requirements of Water Code section 13176 in the manner suggested by CSPA. The Central Valley Water Board cannot specify the manner of compliance with section 13176. A certified laboratory would have to send out its personnel and laboratory equipment to collect an onsite sample for chlorine residual, dissolved oxygen, pH, and temperature. Due to the holding time requirements, it is not possible for the sample to be collected and returned to a certified laboratory for proper analysis within the required sample holding time. It is not legally or factually possible to require ELAP certification of individual personnel or equipment not affiliated with a certified laboratory, because ELAP only certifies laboratories. Finally, section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the Clean Water Act. (Wat. Code §§ 13370, subd. (c), 13372, 13377.)

The proposed permit, General Monitoring Provisions Section I.C. of Attachment E - Monitoring and Reporting Program, has been revised to clarify permit requirements, as follows:

C. *Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory certified for such analyses by the Department of Public Health (DPH). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. In the event a certified laboratory is not available to the Discharger for any onsite field measurements such as pH, turbidity, temperature, and residual chlorine, such analyses performed by a noncertified laboratory will be accepted provided <u>that the analysis is in accordance with 40 CFR 136 or an USEPA approved alternative test procedure, and</u> a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any*

onsite field measurements such as pH, turbidity, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Central Valley Water Board.

CVCWA COMMENTS

CVCWA Comment A. The Mass Effluent Limitations for Mercury Should Be Expressed as Interim Limitations, Rather Than Final Limitations

CVCWA requests revising the Tentative Permit to express the annual mass loading effluent limits for total mercury as interim effluent limitations, rather than final effluent limitations.

RESPONSE: Interim effluent limitations can only be established when there is a compliance schedule and corresponding final effluent limitations. In this case, there is no compliance schedule for mercury. However, the purpose of the performance-based annual mass loading limit for mercury is to cap the discharge at current levels until the mercury TMDL is developed for the San Joaquin River. Therefore, the effluent limit for mercury has been reworded as follows:

j. Mercury. For a calendar year, the performance-based interim ~~The total~~ annual mass loading ~~discharge~~ of total mercury shall not exceed 1.16 pounds.

In addition, a reopener provision has been added to the proposed Permit as follows:

g. Mercury. This Order includes a performance-based interim annual mass loading effluent limit for total mercury to cap the discharge until the mercury TMDL is adopted for the San Joaquin River. If the mercury TMDL is adopted this Order may be reopened to modify the effluent limits for total mercury in accordance with the TMDL.

Corresponding modifications to the Fact Sheet have also been made.

CVCWA Comment B. Effluent Limitations for Molybdenum Should Be Revised Based on a Dilution Credit of 20:1

CVCWA comments that the effluent limits for molybdenum need to be re-calculated using a dilution credit of 20:1 and the permit revised accordingly to reflect these changes for the final effluent limitations. CVCWA disagrees with the findings in the Tentative Permit (p. F-54) regarding the reduction in the dilution credit for molybdenum that state, "*Considering a 20:1 dilution credit for molybdenum, an AMEL and MDEL of*

98 µg/L and 203 µg/L, respectively was calculated. However, the Central Valley Water Board finds that granting of these dilution credits could allocate an unnecessarily large portion of the receiving water's assimilative capacity for molybdenum and could violate the Antidegradation Policy. For this reason, a performance-based effluent limitation is included in this Order. This Order carries forward the final MDEL of 23 µg/L for molybdenum from the previous Order."

CVCWA asserts that recent treatment plant performance constitutes an improper baseline for interpreting consistency with the Antidegradation Policy. Further, it is inappropriate to use the Antidegradation Policy to truncate effluent limitations and deny calculated dilution credits without first making proper findings.

RESPONSE: Central Valley Water Board does not concur. Based on the Discharger's mixing zone study, considering the available mixing and dilution in the San Joaquin River under reasonable worst-case conditions, for molybdenum a dilution credit of up to 20:1 may be allowed for the seasonal secondary discharge and up to 7.7:1 may be allowed for the year-round tertiary discharge. However, the dilution credit has been reduced to 1.8:1 for both discharges, based on the following policies:

(1) Section 1.4.2.2 of the SIP requires that, "*A mixing zone shall be as small as practicable.*", and Section 1.4.2.2.B requires, *"The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements."*

(2) State Water Board Resolution 68-16 (Antidegradation Policy) requires that degradation of the receiving water downstream of the edge of mixing zone must be minimized by the implementation of Best Practical Treatment or Control (BPTC).

Based on the maximum allowed physical dilution in the receiving water, for the seasonal secondary discharge (20:1 dilution) the mixing zone would extend 6,070 meters downstream, and the maximum daily effluent limit would be 203 µg/L. For the year-round tertiary discharge (7.7:1 dilution) the mixing zone would extend 24,897 meters downstream, and the maximum daily effluent limit would be 87 µg/L.

However, based on effluent molybdenum data, the Discharger has demonstrated the Facility can consistently comply with a maximum daily effluent limit of 23 µg/L, which correlates to a mixing zone length of only 23.4 meters and 86.7 meters for the seasonal secondary and year-round tertiary discharges, respectively. This represents mixing zones that are as small as practicable for this Facility. Larger mixing zones are not allowed by the SIP.

Although the Antidegradation Policy does not apply within a mixing zone, the allowance of a mixing zone allows an increase in the concentration and loading of pollutants discharged. Therefore, when a mixing zone and dilution credits are

allowed, it is necessary to ensure any degradation of the receiving water downstream of the mixing zone complies with the Antidegradation Policy. The Antidegradation Policy requires, in part, the following:

> "*Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the* ***best practicable treatment or control of the discharge*** *necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained." (Emphasis added)*

The Antidegradation Policy requires that a discharge shall meet BPTC, which in this case for molybdenum is, at minimum, existing facility performance. Allowing the full dilution credit would allow the Discharger to increase its concentration of molybdenum to the San Joaquin River and reduce the treatment and control of the pollutant. In this case, allowing a discharger to reduce the level of treatment and/or control in a manner contrary to existing facility performance would not comply with the BPTC requirements of the Antidegradation Policy.

Some changes have been made to the Fact Sheet of the proposed Permit to clarify the findings regarding the dilution credits for molybdenum.

CVCWA Comment C. The Effluent Limitation for Nitrate + Nitrite (as N) Is Not Based On a Reasonable Potential Analysis and Therefore Should Be Removed From the Tentative Permit

CVCWA comments that because it has not been determined that the discharge has reasonable potential for nitrate + nitrite (as N) for either the secondary or tertiary discharge, including WQBELs for the same is inappropriate. (See Tentative Permit at p. F-55).

RESPONSE: Central Valley Water Board staff concurs that reasonable potential for nitrate+nitrite (as N) for the seasonal secondary and year-round tertiary discharges has not been demonstrated in the proposed Permit. Therefore, in accordance with 40 CFR 122.44(d)(1)(i), water quality-based effluent limits are not required. The proposed Permit does not include effluent limits for nitrate+nitrite (as N) for the secondary discharge. However, since the current permit (Order R5-2008-0059-01) included effluent limits for nitrate+nitirite (as N) of 10 mg/L for the tertiary discharge, the effluent limits cannot be removed due to federal anti-backsliding provisions. The Clean Water Act specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in Clean Water Act sections 402(o) or 303(d)(4), or, where applicable, 40 CFR 122.44(l). The removal of the effluent limits for the tertiary discharge does not meet the exceptions

to the anti-backsliding provisions, because while there is new nitrate+nitrite data for the secondary discharge that demonstrates no reasonable potential, there is no new data for the tertiary discharge. Consequently, there is no new information to meet the exceptions in the anti-backsliding provisions.

CVCWA Comment D. The UV Requirements Should Be Modified In a Manner That Ensures Proper Disinfection Without Dictating the Manner of Permit Compliance

CVCWA request that the UV Disinfection Operating Specifications described in section VI.C.4.a be replaced with the following permit language:

a) **Filtration Operating Specifications**. Turbidity of the filter effluent measured at UVS-001 shall not exceed:

i. 2 NTU, as a daily average
ii. 5 NTU, more than 5% of the time within a 24-hour period
iii. 10 NTU, at any time

b) **Ultraviolet (UV) Disinfection System Operating Specifications**. The UV disinfection system must be operated in accordance with an approved UV Operations and Maintenance (O&M) Program that assures adequate disinfection. By <DATE>, the Discharger shall submit a UV Disinfection O&M Program. The O&M Program shall include, at a minimum, operational specifications for minimum average hourly UV dose, UV transmittance, flow, and turbidity necessary to meet the disinfection requirements of this Order and to provide virus inactivation equivalent to Title 22 Disinfected Tertiary Recycled Water. The O&M Program shall also include maintenance requirements, such as lamp cleaning and lamp replacement procedures, meter maintenance procedures, and a contingency plan for when the turbidity and/or UV transmittance does not meet the operations requirements for adequate disinfection.

RESPONSE: Central Valley Water Board staff does not concur. Please see Response to Discharger Comment Nos. 6 and 7.