

Central Valley Regional Water Quality Control Board
27/28/29 January 2010 Board Meeting

Response to Comments
for the
City of Turlock
Water Quality Control Facility
Tentative Waste Discharge Requirements

The following are Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) Permit renewal and new Time Schedule Order (TSO) for the City of Turlock (hereinafter Discharger) Water Quality Control Facility (hereinafter Facility).

A tentative NPDES Permit and TSO were initially issued for public comment on 9 December 2008. The Central Valley Water Board received public comments regarding the December 2008 tentative NPDES Permit from the Discharger, the Central Valley Clean Water Association (CVCWA), and the California Sportfishing Protection Alliance (CSPA). In preparation for the 5 February 2009 Board Meeting and in response to comments received on the tentative NPDES Permit, Central Valley Water Board staff prepared a redline/strikeout version which showed the applicable revisions. Public comments were subsequently received on the redline/strikeout version from the Discharger and CSPA. In order to address major issues raised in the subsequent public comments regarding allowable mixing zones and the development of effluent limitations for hardness-dependent metals, the tentative NPDES Permit was not presented at the 5 February 2009 Board Meeting.

The Discharger submitted a mixing zone study on 16 June 2009 requesting approval of mixing zones and dilution credits for chlorodibromomethane, dichlorobromomethane, carbon tetrachloride, and nitrate. A revised (second) tentative NPDES Permit was issued for public review and comments on 13 August 2009 which proposed mixing zones and dilution credits for the identified constituents, and the re-calculation of effluent limitations for hardness-based metals. Public comments regarding the second tentative NPDES Permit were required to be submitted to the Central Valley Water Board office by 14 September 2009. The Central Valley Water Board received public comments regarding the second tentative NPDES Permit from the Discharger and CSPA.

In response to public comments received regarding the second tentative NPDES Permit, a revised (third) tentative NPDES permit was issued for public review on 19 October 2009, proposing a modified compliance schedule for electrical conductivity effluent limitations, revised performance-based effluent limitations for nitrate, and a corrected dilution credit for human health criteria. Public comments regarding the third tentative NPDES Permit were required to be submitted to the Central Valley Water Board by 20 November 2009. The Central Valley Water Board received public comments regarding the third tentative NPDES Permit from the Discharger and CSPA.

All submitted comments were accepted into the public record. Parts One, Two, Three, and Four of the following Staff Response to Comments includes a summary of the public comments received on the first tentative NPDES Permit and TSO issued on 9 December 2008, the Redline/Strikeout version prepared on 23 January 2009 for the February 2009 Board Meeting, the second tentative permit issued on 13 August 2009, and the third tentative permit issued on 19 October 2009, respectively.

PART ONE: 9 DECEMBER 2008 TENTATIVE NPDES PERMIT

CITY OF TURLOCK (DISCHARGER) COMMENTS

Discharger Comment No. 1. Provisions and Requirements Implementing State Law

The Discharger comments that the tentative NPDES Permit imposes effluent limitations for 5-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), turbidity, and pathogens, as well as a requirement for a tertiary level of treatment, or its equivalent, based on the California Department of Public Health (DPH) reclamation criteria published in Title 22, for the general protection of beneficial uses. These permit provisions are not required under the federal Clean Water Act (CWA), which requires secondary treatment or its equivalent for discharges from publicly owned treatment works (POTWs), and associated BOD₅, TSS, turbidity, and pathogen restrictions. The Discharger comments that BOD₅, TSS, turbidity, pathogen, and technology-based tertiary or its equivalent requirements are being included in the tentative NPDES Permit to implement State law and DPH recommendations and requests that these requirements be included in the Finding specifying that violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

The Discharger also comments that Finding II.S includes reference to provisions that do not exist in the tentative NPDES Permit.

RESPONSE: The Discharger comments that the requirement to provide a tertiary level of treatment, or its equivalent, is not required under the federal CWA. Thus, the Discharger concludes that these provisions are necessary only to implement State law and violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations. Central Valley Water Board staff does not concur. CWA section 301(b) and Title 40 of the Code of Federal Regulations (CFR) section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. The proposed NPDES Permit requires a tertiary level of treatment, or equivalent, to protect the municipal and domestic supply (MUN), water contact recreation (REC-1), and agricultural supply (AGR) beneficial uses. Thus, violations of the effluent limitations and other provisions/requirements are subject to the enforcement remedies that are available for NPDES violations.

The Discharger further comments that section II.S of the tentative NPDES Permit contains inappropriate cross-references. Central Valley Water Board staff concurs and has modified section II.S of the proposed NPDES Permit to remove the inaccurate references.

Discharger Comment No. 2. Copper Translator for Discharge Point No. 001

The Discharger comments that the tentative NPDES Permit does not use a translator value for copper based on the Discharger's translator study. The Discharger requests that the effluent limitations for copper at Discharge Point No. 001 be calculated using the translator values developed using effluent samples.

RESPONSE: The Discharger submitted monitoring data to support metal translators for the discharge to the San Joaquin River on 11 June 2008. A formal report was requested by the Central Valley Water Board on 16 June 2008. The Discharger submitted the Metals Translator Report on 16 July 2008 and requested acute and chronic translators be used to calculate aquatic life criteria for copper, lead, and zinc. Upon review of the Metals Translator Report, Central Valley Water Board staff identified several deficiencies, including the manner in which the translator study was conducted, the interpretation of the data, and the report conclusions. Central Valley Water Board staff issued their comments to the Discharger on 31 October 2008; the Discharger submitted a subsequent response on 21 November 2008. The Discharger's response addressed the major staff concerns regarding the report.

The Discharger's Metals Translator Report identified the following translators for copper, lead, and zinc based on effluent metals data collected from September 2006 through April 2007:

Parameter	Translator (1/fD)	
	Acute	Chronic
Copper, Total Recoverable	1.22	1.52
Lead, Total Recoverable	1.08	1.32
Zinc, Total Recoverable	1.00	1.04

Although the Metals Translator Report only addresses the discharge to the San Joaquin River at Discharge Point No. 002, the site-specific metals translators have also been applied in the proposed NPDES Permit to the discharge to Harding Drain at Discharge Point No. 001. The metal translators are applicable to discharges to Harding Drain, because the proposed translators are based on effluent samples only, and are protective of the receiving water under critical low flow conditions (i.e., during periods of no dilution). Based on the calculation of water quality criteria using the applicable site-specific translators, the effluent exhibits reasonable potential to cause or contribute to an exceedance of water quality criteria for copper. There is no reasonable potential for lead and zinc using the site-specific translators or the

U.S. Environmental Protection Agency (USEPA) default translators. Based on the use of site-specific metal translators for copper, the effluent limitations for copper have been revised from the first tentative NPDES Permit and were included in all subsequent tentative NPDES Permits as follows:

Table 6. Effluent Limitations – Discharge Point No. 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper, Total Recoverable	µg/L	8.9	--	15	--	--

Additionally, the Fact Sheet (Attachment F) and Attachment G have been revised to reflect the calculation of water quality criteria for copper, lead, and zinc based on the applicable site-specific metals translators.

Discharger Comment No. 3. Effluent Limitations for Carbon Tetrachloride, Chlorodibromomethane, and Dichlorobromomethane in Harding Drain Based on MUN Beneficial Use

The Discharger requests that the average monthly effluent limitations (AMELs) and maximum daily effluent limitations (MDELs) for carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane for discharges to Harding Drain be revised to be consistent with the effluent limitations for the discharge to the San Joaquin River, which are less stringent based on the available dilution in the San Joaquin River.

RESPONSE: Central Valley Water Board staff understands the Discharger’s concern. However, the Central Valley Water Board does not have the authority to grant an exception to the State Water Resources Control Board’s (State Water Board’s) Source of Drinking Water Policy through an individual permit adoption action. An exception to the State Water Board Policy must be processed through an amendment of the *Water Quality Control Plan, Fourth Edition (Revised October 2007), for the Sacramento and San Joaquin River Basins* (Basin Plan). When applying criteria for protection of human health, the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP) does not allow for less stringent effluent limitations for carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane at Discharge Point No. 001 into the Harding Drain. The proposed less stringent effluent limitations for these constituents at Discharge Point No. 002 is based on the dilution due to the available flow in the San Joaquin River. Harding Drain flow does not provide the same level of dilution; therefore, the Central Valley Water Board is not considering dilution credits for development of effluent limits for Discharge Point No. 001.

Discharger Comment No. 4. Compliance Schedules for Aluminum, Iron, Manganese, and Nitrate-N Should Be Included in the Permit

The Discharger requests that compliance schedules granted for the AMEL and MDEL for aluminum at Discharge Point No. 002 be included within the permit, as those limitations are derived from a new interpretation of the Basin Plan's narrative toxicity water quality objective, applying USEPA developed National Recommended Ambient Water Quality Criteria. The Discharger also requests that compliance schedules granted for iron, manganese, and nitrate be included within the permit, as the final effluent limitations for these constituents are due to the new application and interpretation of the Basin Plan's narrative objective for chemical constituents, resulting in limitations more stringent than the limitations in the Discharger's prior NPDES Permit.

RESPONSE: Although the Discharger submitted an Infeasibility Analysis Report on 31 December 2008 for iron and manganese, Central Valley Water Board staff does not concur that compliance schedules for these parameters are necessary. As part of the Discharger's justification for compliance schedules for these parameters, the Discharger evaluated monitoring data from May 2006 through December 2008. However, as described further in section IV.C.3.e of the Fact Sheet (Attachment F) monitoring conducted prior to October 2006 is not representative of the effluent from the Facility and was not used to conduct the reasonable potential analysis (RPA) for these parameters. Thus, it is not appropriate to evaluate monitoring conducted prior to October 2006 to justify infeasibility.

For iron and manganese, data indicates that the Discharger can immediately comply with the annual average effluent limitations based on data submitted since October 2006. The maximum effluent concentrations (MECs) for iron and manganese were 300 µg/L and 50 µg/L, respectively, based on monitoring conducted between October 2006 and December 2008, which are equal to the applicable annual average effluent limitations. The maximum running average concentrations in the effluent for iron and manganese were 158 µg/L and 23 µg/L, respectively, during this period. Thus, it appears the Discharger can immediately comply with these limitations and compliance schedules for iron and manganese have not been granted. Additionally, given that the discharge to the San Joaquin River from Discharge Point No. 002 will not commence for at least 18 months, but possibly later, based on the time necessary to receive the proper approvals, put out bids for construction, and construct the outfall pipeline, Central Valley Water Board staff does not concur that the Discharger is not in jeopardy of immediate non-compliance and believes that significant time is available within the proposed NPDES Permit itself to allow the Discharger to determine methods to comply with the final effluent limitations for iron and manganese.

The Discharger comments that the compliance schedule for nitrate should be included in the proposed NPDES Permit rather than the TSO, and that the new effluent limitation is based on a new interpretation of the Basin Plan's narrative chemical constituents objective. Central Valley Water Board staff does not concur.

The effluent limitation for nitrate is based on the Primary Maximum Contaminant Level (MCL). The Basin Plan incorporates the California Drinking Water Standards (i.e., MCLs) by reference as water quality objectives. Therefore, MCLs are considered as numeric water quality objectives. Thus, the application of the Primary MCL is not considered a “new interpretation” of a narrative objective and a compliance schedule for nitrate cannot be included in the proposed NPDES Permit.

Results of effluent monitoring demonstrate that the Discharger is not able to consistently comply with the new effluent limitations for aluminum at Discharge Point No. 001, which are based on the Secondary MCL. The Discharger indicated in its 31 December 2008 Infeasibility Analysis Report that additional time is necessary to conduct source identification studies and implement additional source controls. Therefore, a compliance schedule has been included in the proposed TSO providing no later than 1 January 2015 for the Discharger to comply with the final effluent limitations for aluminum at Discharge Point No. 001.

Results of effluent monitoring demonstrate that the Discharger is not able to consistently comply with the new effluent limitations for aluminum at Discharge Point No. 002, which are based on the Secondary MCL and the National Ambient Water Quality Criteria for protection of freshwater aquatic life implementing the Basin Plan’s narrative toxicity objective. Central Valley Water Board staff does not concur that the compliance schedule for final effluent limitations based on the narrative toxicity objective should be included in the proposed NPDES Permit. It is anticipated that the interim actions necessary to achieve compliance with the final effluent limitations for aluminum based on both the Secondary MCL and implementation of the narrative toxicity objective will be the same and will be conducted simultaneously, as indicated by the request for 5-year compliance schedules for all effluent limitations for aluminum to conduct source identifications studies and implement additional source controls. Therefore, it is appropriate to include a single compliance schedule to achieve compliance with all final effluent limitations for aluminum at Discharge Point No. 002. Because the annual average effluent limitation is based on the Secondary MCL, the compliance schedule cannot be included in the proposed NPDES Permit. Therefore, a compliance schedule has been included in the proposed TSO providing no later than 1 January 2015 for the Discharger to comply with the final effluent limitations for aluminum at Discharge Point No. 002.

Discharger Comment No. 5. Copper Translator at Discharge Point No. 002

The Discharger requests that if a mixing zone study is required to grant the San Joaquin River based acute translator value, that the effluent translator samples be used until the Discharger completes a mixing zone study that allows a receiving water or “synthetic” sample (effluent and upstream receiving water mix) based translator.

RESPONSE: The Discharger submitted monitoring data to support metal translators for the discharge to the San Joaquin River on 11 June 2008. A formal report was requested by Central Valley Water Board staff on 16 June 2008. The Discharger submitted the Metals Translator Report on 16 July 2008 and requested acute and chronic translators be used to calculate aquatic life criteria for copper, lead, and zinc. Upon review of the Metals Translator Report, Central Valley Water Board staff identified several deficiencies, including the manner in which the translator study was conducted, the interpretation of the data, and the report conclusions. Central Valley Water Board staff issued their comments to the Discharger on 31 October 2008; the Discharger submitted a subsequent response on 21 November 2008. The Discharger's response addressed the major staff concerns regarding the report.

Based on the findings of the Metals Translator Report, the Discharger has requested that water quality criteria for copper, lead, and zinc be calculated using site-specific translators. For the discharge to the San Joaquin River at Discharge Point No. 002, the Discharger requested that water quality criteria be calculated using the following site-specific translators derived using a synthetic sample simulating critical low flow conditions in the San Joaquin River (4:1 based on the 7Q10 taken from other studies in the vicinity of the discharge).

Parameter	Translator (1/fD)	
	Acute	Chronic
Copper, Total Recoverable	1.45	1.82
Lead, Total Recoverable	6.67	11.34
Zinc, Total Recoverable	1.19	1.39

USEPA's translator guidance states that "*depending on state guidance or regulatory negotiations, samples may be collected from the effluent, the receiving water before mixing with the effluent, the receiving water edge of the mixing zone, and/or the receiving water in the far field (beyond the mixing zone).*" Although the USEPA guidance allows for alternative sampling locations, the allowance of chronic translators based on the 4:1 synthetic samples is not consistent with section 1.4.2 of the SIP. Section 1.4.2 of the SIP requires a mixing zone study in order to grant mixing zones and dilution credits. However, translators based on the 4:1 synthetic samples assume dilution is available even though an appropriate mixing zone analysis has not been conducted. Therefore, until a mixing zone analysis has been conducted, it is not appropriate to grant the translators based on the 4:1 synthetic sample. In lieu of calculating water quality criteria using the translators based on the 4:1 synthetic samples, Central Valley Water Board staff concludes that it is appropriate to apply translators based on effluent samples to adjust water quality criteria for copper, lead, and zinc for the discharge to the San Joaquin River from Discharge Point No. 002. The Discharger's Metals Translator Report identified the following translators for copper, lead, and zinc based on effluent metals data collected from September 2006 through April 2007:

Parameter	Translator (1/fD)	
	Acute	Chronic
Copper, Total Recoverable	1.52	1.22
Lead, Total Recoverable	1.32	1.08
Zinc, Total Recoverable	1.04	1.00

Based on the calculation of water quality criteria using the applicable site-specific translators, the effluent exhibits reasonable potential to cause or contribute to an exceedance of water quality criteria for copper, lead, and zinc. Based on the use of site-specific metal translators for copper, lead, and zinc, the effluent limitations for copper, lead, and zinc have been revised from the first tentative Order and were included in all subsequent tentative NPDES Permits as follows:

Table 7. Effluent Limitations – Discharge Point No. 002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper, Total Recoverable	µg/L	8.9	--	15	--	--
Lead, Total Recoverable	µg/L	2.6	--	3.9	--	--
Zinc, Total Recoverable	µg/L	81	--	106	--	--

Additionally, the Fact Sheet (Attachment F) and Attachment G have been revised to reflect the calculation of water quality criteria for copper, lead, and zinc based on the applicable site-specific metals translators.

Discharger Comment No. 6. Assimilative Capacity for Nitrate

On 31 December 2008, the Discharger submitted to Central Valley Water Board staff an assessment of assimilative capacity for nitrate in the San Joaquin River. The assessment concluded that sufficient upstream assimilative capacity was available based on the conservative and protective assumption of using historical San Joaquin River concentrations *downstream* of the Discharger’s discharge and observed 7Q10 flow upstream of the discharge. Because a more stringent performance-based nitrate limitation is achievable, protective, and allows additional downstream assimilative capacity, the Discharger recommends the performance-based limitation as the final effluent limitation.

RESPONSE: The proposed discharge to the San Joaquin River is considered an incompletely-mixed discharge in accordance with the SIP. Section 1.4.2.1 of SIP states the following regarding incompletely-mixed discharges, “*Dilution credits and mixing zones for incompletely-mixed discharges shall be considered by the RWQCB only after the discharger has completed an independent mixing zone study and demonstrated to the satisfaction of the RWQCB that a dilution credit is appropriate.*” Subsequent to submitting this comment, the Discharger provided a dilution/mixing

zone study prepared by Larry Walker Associates on 16 June 2009 (Technical Memorandum entitled "City of Turlock Water Quality Control Facility – San Joaquin River Discharge Mixing Zone Study and Requested Amendment to Tentative Order, NPDES No. CA0078948"). Using the Cornell Mixing Zone Expert System (CORMIX) model, the point of complete mixing downstream of the Discharger's proposed discharge to the San Joaquin River was estimated.

According to the report, initial mixing at the proposed point of discharge is momentum and buoyancy based; complete mixing is then achieved more slowly through dispersion as the narrow plume hugs the eastern bank of the San Joaquin River. For nitrate, the results of the study indicates that the edge of the mixing zone where complete mixing occurs is 3,007 meters (almost 1.9 miles) downstream of the proposed discharge point to the San Joaquin River.

Based on its review of the Discharger's study, Central Valley Water Board staff concludes that adequate justification exists and dilution should be allowed for nitrate. The dilution credit was modeled based on the 30Q10 (180 cubic feet per second (cfs) or 116 million gallons per day (mgd)) receiving water flow and the design Facility discharge flow of 20 mgd. Therefore, a dilution ratio of up to 5.8:1 may be allowed for the calculation of water quality-based effluent limitations (WQBELs) for nitrate. The Discharger, in its comments submitted on 11 September 2009, requested that the dilution factor be limited to 2.4, which reflects a mixing zone at which a performance-based effluent limitation can be achieved. The edge of the mixing zone representing the dilution factor of 2.4 is 29.7 meters (just under 100 feet) downstream of the outfall to the San Joaquin River. Central Valley Water Board staff concurs with use of the smaller mixing zone for nitrate that represents the performance of the existing Facility. The observed average effluent concentration for the Facility is 16 mg/L nitrate (as N), with a standard deviation of 3.8 mg/L nitrate (as N). A performance-based effluent limitation, 29 mg/L nitrate (as N), was calculated based on the effluent average (16 mg/L) plus 3.3 times the standard deviation ($3.3 \times 3.8 \text{ mg/L} = 13 \text{ mg/L}$)¹. However, because the MEC for nitrate of 31 mg/L exceeds the statistically derived effluent limitation, the proposed NPDES Permit includes a performance-based effluent limitation for nitrate equivalent to the MEC.

The proposed NPDES Permit only allows a mixing zone for human health criteria. The proposed NPDES Permit does not allow mixing zones for compliance with aquatic toxicity criteria. The mixing zone is as small as practicable, will not compromise the integrity of the entire water body, restrict the passage of aquatic life, dominate the waterbody or overlap existing mixing zones from different outfalls. Additionally, the mixing zone in the proposed NPDES Permit meets the conditions specified in section 1.4.2.2 of the SIP (Mixing Zone Conditions).

¹ The mean plus 3.3 standard deviations represents the 99.9th percentile.

The mixing zone also complies with the Basin Plan, which requires that the mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected. In determining the size of the mixing zone, Central Valley Water Board staff has considered the procedures and guidelines in USEPA's *Water Quality Standards Handbook*, 2d Edition (updated July 2007), section 5.1, and section 2.2.2 of USEPA's *Technical Support Document for Water Quality-based Toxic Control* (TSD). The SIP incorporates the same guidelines.

Discharger Comment No. 7. Interim Limitation for Iron

The Discharger requests an interim effluent limitation for iron of 2,500 µg/L, based on the MEC.

RESPONSE: See response to Discharger Comment No. 4.

Discharger Comment No. 8. Interim Limitation for Manganese

The Discharger requests an interim effluent limitation for manganese of 200 µg/L, based on the MEC.

RESPONSE: See response to Discharger Comment No. 4.

Discharger Comment No. 9. Interim Limitation for Aluminum

The Discharger requests an interim effluent limitation for aluminum be set as a MDEL of 750 µg/L.

RESPONSE: As discussed in Finding 15 of the proposed TSO, the compliance time schedule includes an interim effluent limitation for aluminum based on the performance of the Facility. The interim effluent limitations consist of a MDEL derived using sample data provided by the Discharger. Because the MEC for aluminum was greater than the statistically calculated effluent limitations, the interim limitation for aluminum was established at the MEC of 640 µg/L.

Discharger Comment No. 10. Interim Limitation for Electrical Conductivity

The tentative NPDES Permit's interim performance-based effluent limitation calculation for salinity as electrical conductivity was calculated based on the highest annual average of less than 3 years of data (October 2006 through April 2008). Because only 2.5 years are considered, the Discharger comments that there is a high probability that this interim limitation will not be achievable. A probability distribution was fitted to the available monthly data (October 2006 through December 2008) with no consideration of possible seasonal affects, and a recursive "Monte Carlo" model was run for a 100 year

period (1,200 months). This recursion was performed 10 times to develop an estimate of average annual averages for the 10 recursions. The Discharger requests that the interim annual average effluent limitation for electrical conductivity at Discharge Point Nos. 001 and 002 be modified based on the Discharger's calculations.

RESPONSE: Central Valley Water Board staff has evaluated the Discharger's calculations and concludes that the Discharger's proposed interim limitation for electrical conductivity is appropriate. Therefore, the proposed NPDES Permit has been modified to correct the interim annual average limitation from 922 $\mu\text{mhos/cm}$ to 979 $\mu\text{mhos/cm}$.

Discharger Comment No. 11. Water Effects Ratios (WER) Reopener

In the near term, the Discharger plans on continued limited episodic use of aluminum-based coagulants for control of discharge turbidity that may cause intermittent exceedances of the proposed AMEL for aluminum and may be related to episodes of elevated copper in the effluent that could exceed the proposed AMEL. If an alternate coagulant or treatment process cannot feasibly be used, the Discharger will consider updating other aluminum WER studies performed in the San Joaquin River (i.e., City of Manteca and City of Modesto preliminary) to determine an appropriate acute site specific objective for the San Joaquin River. Operational conditions may also cause intermittent copper exceedances and the Discharger may pursue site-specific adjustments to this CTR water quality standard using USEPA promulgated biotic ligand model (BLM) for copper. The Discharger requests that the re-opener language be modified as follows:

- e. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, except for the chronic aquatic life criterion for copper, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for inorganic constituents. An acceptable WER can be used to adjust aquatic life-based water quality standards, including metals such as copper, and Basin Plan incorporated EPA water quality standards for ammonia and aluminum. EPA has also promulgated an objective for copper based on the Biotic Ligand Model (BLM) that can be used as the basis for a site specific copper effluent limitations. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators and submits an approved report, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

RESPONSE: Central Valley Water Board staff concurs with the Discharger's suggested language to further clarify the permit reopener language for future WERs and translators. Therefore, the reopener in the proposed NPDES Permit has been revised based on the Discharger's suggested modifications.

Discharger Comment No. 12. Low Method Detection Limit (MDL) Study and/or Reopener for Trihalomethanes and Carbon Tetrachloride

The tentative NPDES Permit's final effluent limitations for trihalomethanes and carbon tetrachloride for the discharge to the San Joaquin River are calculated based on upstream receiving water concentrations reported as "not detected" at MDLs between 0.2 µg/L and 0.3 µg/L. Alternative analytical methods with MDLs approaching 0.05 µg/L could demonstrate additional assimilative capacity, and allow higher yet still protective effluent limitations.

The Discharger requests that adoption of the tentative NPDES Permit be briefly delayed to allow the Discharger to perform a low MDL study. Alternatively, the Discharger requests that a specific re-opener be added to the tentative NPDES Permit to allow this new information for recalculation of the effluent limitations:

RESPONSE: All upstream receiving water data was reported as non-detect for chlorodibromomethane, dichlorobromomethane, and carbon tetrachloride, demonstrating that assimilative capacity was available. The first tentative NPDES Permit included effluent limitations that were calculated considering the dilution credits and available assimilative capacity. Subsequent to submitting this comment, the Discharger performed an upstream ambient disinfection byproduct low-level concentration study to better quantify available assimilative capacity in the San Joaquin River. The Discharger collected upstream samples on 25 February 2009 and 15 April 2009. The analytical laboratory performed a modified USEPA 524.2 method that uses a selected ion monitoring (SIM) procedure with gas chromatograph/mass spectrometry (GC/MS) analysis. The SIM method targets limited predetermined ion ranges allowing higher scanning rates for these ranges. The reporting limits using the SIM method are approximately three to five times lower than the MDL for the standard method. Based on the use of the SIM procedure, all target chlorination byproducts concentrations were reported as "not detected" at a reporting limitation of 0.05 µg/L. The ambient monitoring demonstrates the San Joaquin River has additional assimilative capacity for carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane, which would result in higher WQBELs. The effluent limitations for chlorodibromomethane, dichlorobromomethane, and carbon tetrachloride at Discharge Point No. 002 were re-calculated considering the additional assimilative capacity and the new limits were included in all subsequent tentative NPDES Permits.

Discharger Comment No. 13. Salinity Source Control Program

The Discharger comments that the tentative NPDES Permit requires the Discharger to develop and implement a Salinity Source Control Program to achieve a non-regulatory¹ goal of the “annual average salinity of the water supply plus 500 $\mu\text{mhos/cm}$.” The tentative NPDES permit also requires the Discharger to participate financially in the development of the Central Valley Salinity Management Plan at a level commensurate with its contributions of salinity to the Delta. The Discharger requests that the Salinity Source Control Program be developed for purposes of compliance with the final effluent limitations for electrical conductivity in the tentative NPDES Permit, and omit reference to the non-regulatory goal of the annual average salinity of the water supply plus 500 $\mu\text{mhos/cm}$. The Discharger also requests that the requirement to financially participate in the Central Valley Salinity Management Plan process be removed from the tentative NPDES Permit.

RESPONSE: The compliance schedule in the proposed NPDES Permit has been revised to be consistent with the salinity and boron Total Maximum Daily Load (TMDL), and requires the implementation of a Source Control Program and the submission of annual reports demonstrating reasonable progress in the reduction of salinity in its discharge to the San Joaquin River. Central Valley Water Board staff concurs that these requirements satisfy the requirements of the TMDL and that the salinity goal of the water supply electrical conductivity plus an increment of 500 $\mu\text{mhos/cm}$ is not necessary. Therefore, the proposed NPDES Permit has been revised to remove this requirement.

Unlike most other facilities that discharge salt to the Delta, the Discharger’s salinity discharge is subject to the salinity and boron TMDL. The TMDL includes a compliance schedule and control program for salinity in the lower San Joaquin River. The TMDL implementation plan does not require financial contribution to the Central Valley Salinity Management Plan. Accordingly, this requirement was deleted from the proposed NPDES Permit.

Discharger Comment No. 14. Compliance Schedule For Final Effluent Limitations for Electrical Conductivity

The Discharger requests that the compliance schedule for final effluent limitations for electrical conductivity be consistent with the Salt and Boron TMDL and prior permitting action taken by the Central Valley Water Board for the City of Modesto, and that final compliance be required by 28 July 2022 and/or 28 July 2026.

¹ The use of the term “non-regulatory” in this context means a water quality goal that has not been the subject of a quasi-legislative process resulting in regulatory action to adopt the goal as a water quality objective or other Basin Plan provision.

RESPONSE: The proposed NPDES Permit originally included a shorter compliance schedule for compliance with the final effluent limitations for electrical conductivity due to uncertainty as to whether the compliance schedule allowed by the TMDL is as short as practicable for the Facility. However, this shortened compliance schedule would not allow for an orderly phased approach to reducing salinity discharges, consistent with the TMDL, commencing with source control and concluding with potential installation of reverse osmosis/micro-filtration technology should source control efforts not achieve sufficient reductions to ensure compliance. The shortened compliance schedule does not allow sufficient time to meaningfully implement and evaluate source control efforts, which requires approximately 3 to 5 years, and subsequently address further reduction via increased treatment processes if necessary, which could take up to 8 years for approval, design, construction, and start-up assuming a disposal method for the produced brine can be developed and approved and additional energy identified. Consequently, the Discharger would have to immediately start investigating and implementing costly upgrades that may be unnecessary should source control efforts succeed. Therefore, the compliance schedule for electrical conductivity has been revised in the proposed NPDES Permit to be consistent with the TMDL. Source control measures recommended by the Discharger in their 2 February 2009 and 11 September 2009 comments have also been incorporated in the proposed NPDES Permit.

Discharger Comment No. 15. Compliance Determination - Annual Average Calculation

The Discharger requests that the following clarification be provided for calculation of annual averages in the Compliance Determination section of the tentative NPDES Permit:

H. Annual Average Calculation. Annual averages for iron, manganese, aluminum, and salinity effluent concentrations shall be performed as the average value of each averaging period as specified in the Monitoring and Reporting Program. For example, effluent monitoring for iron is required quarterly. The annual average for this constituent would be the average of the four quarterly averages. Each quarterly average would be the average of the verified results in that calendar quarter.

RESPONSE: Central Valley Water Board staff concurs that a compliance determination provision should be added to the proposed NPDES Permit to ensure the proper calculation of annual average constituent concentrations in the effluent. The following language has been added to the proposed NPDES Permit.

H. Annual Average Effluent Limitations. Annual average effluent constituent concentrations for determining compliance with the annual average effluent limitations for iron, manganese, aluminum, and salinity shall be performed as

the average value of each averaging period required in the Monitoring and Reporting Program. For example, if quarterly effluent monitoring is required, the annual average is the average of the four quarterly averages. Each quarterly average is the average of the verified results during that calendar quarter.

Discharger Comment No. 16. Priority Pollutant Monitoring

Table E-3 requires quarterly or monthly effluent monitoring for specified priority pollutants, and then monthly effluent monitoring for all “priority pollutants” during the third year of the permit term. To avoid confusion of potential redundant monitoring requirements, the Discharger requests that the word “remaining” be inserted before the term “Priority Pollutants” in Table E-3.

RESPONSE: Additional language has been added to Footnote 9 of Table E-3 stating that the Discharger is not required to conduct effluent monitoring for priority pollutants that have already been sampled in a given month.

Discharger Comment No. 17. Aluminum Site-Specific Studies

The Discharger comments that the Fact Sheet (Attachment F) references aluminum site-specific studies that are not required by the tentative NPDES permit. The Discharger requests that the reference be removed from the Fact Sheet (Attachment F).

RESPONSE: Central Valley Water Board staff concurs and has made the suggested modification to the proposed NPDES Permit.

CENTRAL VALLEY CLEAN WATER ASSOCIATION (CVCWA) COMMENTS

CVCWA Comment No. 1. The Agricultural Drain at Issue Is Not Designated MUN

The tentative NPDES Permit applies the MUN designation to the Harding Drain based on the State Water Board's Sources of Drinking Water Policy (Resolution No, 88-63) and the Basin Plan. The tentative NPDES Permit recognizes that the agricultural drain meets the exceptions of Resolution No, 88-63, however, CVCWA comments that the tentative NPDES Permit incorrectly concludes that the Central Valley Water Board must formally de-designate the agricultural drain through a Basin Plan amendment process for the exception to apply.

CVCWA does not concur that formal de-designation must occur. CVCWA comments that a review of Resolution No. 88-63 and the Basin Plan establish that the exceptions are self-implementing. That is, the Central Valley Water Board need only find that the exception for agricultural drainage applies to the Harding Drain in order to exclude requirements in the tentative NPDES Permit

related to the MUN designation.

RESPONSE: See response to Part One, Discharger Comment No. 3.

CVCWA Comment No. 2. Compliance Schedule for Electrical Conductivity

CVCWA comments that the tentative NPDES Permit should include a compliance schedule that extends the final compliance date to 28 July 2022, and/or 28 July 2026, as appropriate. Such a modification is consistent with the direction provided by USEPA and the State Water Board on compliance schedules, TMDLs, and prior permitting action taken by the Central Valley Water Board for the City of Modesto.

RESPONSE: See response to Part One, Discharger Comment No. 14.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS

CSPA Comment No. 1. Antidegradation Analysis

CSPA comments that the tentative NPDES Permit contains an inadequate antidegradation analysis that does not comply with the requirements of CWA section 101(a), 40 CFR 131.12, the State Water Board's Antidegradation Policy (Resolution 68-16), and California Water Code (CWC) sections 13146 and 13247. CSPA comments that the antidegradation analysis in the Fact Sheet (Attachment F) does not contain sufficient information regarding the factual, legal and policy questions considered in preparing the permit as required by 40 CFR 124.8(a) and (a)(4).

RESPONSE: CSPA comments that the antidegradation analysis contained in the proposed NPDES Permit does not contain sufficient information regarding the proposed relocation of the discharge. Central Valley Water Board staff does not concur.

The State Water Board's Administrative Procedures Update (APU) 90-004 Antidegradation Policy Implementation for NPDES Permitting allows for a simple antidegradation analysis where a Regional Water Board determines that 1) a reduction in water quality will be spatially localized or limited with respect to the waterbody, 2) a reduction in water quality is temporally limited, 3) a proposed action will produce minor effects which will not result in a significant reduction of water quality; and 4) a proposed activity has been approved in a General Plan and has been approved in a General Plan and has been adequately subjected to the environmental and economic analysis required in an Environmental Impact Report (EIR). The proposed NPDES Permit does not authorize an increase in flow, but does authorize a new discharge location. As discussed in the Discharger's Antidegradation Analysis, the shift in the discharge location approximately 560 feet upstream in the San Joaquin River from the confluence with Harding Drain would

similarly shift the bounds of the expected mixing zone, but would not cause an increase in the size of the mixing zone. The relocation of the Discharger's discharge to the San Joaquin River from Harding Drain is not expected to produce a change in the water quality in the San Joaquin River downstream where the effluent and ambient water are reasonably well-mixed. Thus, there are no anticipated far-field impacts of the proposed relocation in the San Joaquin River. The new discharge point is only a short distance upstream of the existing discharge point and will not have significant impacts on the receiving waters immediately surrounding the new discharge location. Thus, the change in location is not a "substantial relocation" requiring a complete antidegradation review. Additionally, a final EIR was certified by the Discharger in May 2005 after extensive public and regulatory agency review and comment, including comments from the Central Valley Water Board. The Discharger filed its Petition for Change with the State Water Board in July 2005, which was approved in July 2006 after public and regulatory agency review and comment. Thus, Central Valley Water Board staff concludes that the relocation in discharge meets the conditions to conduct a simple, rather than complete, antidegradation analysis.

CSPA questions the purpose of the relocation and assumes that the Discharger is undertaking the expense of constructing a 5-mile long pipeline to move the point of discharge to gain dilution instead of providing additional treatment. The Discharger developed a report titled, *Antidegradation Analysis for Harding Drain Bypass Pipeline and Outfall Project, September 2008*, (Larry Walker Associates), that provides a simple antidegradation analysis following the guidance provided by State Water Board APU 90-004. According to the Antidegradation Analysis,

"The primary goal and objective of the proposed project is to eliminate the discharge of the City's treated wastewater to the Harding Drain. Changing the point of discharge from Harding Drain to a direct discharge to the San Joaquin River will serve at least two beneficial purposes. First, removal of the City's permitted wastewater discharges from Harding Drain will remove it from an agricultural drain whose primary function is management of drainage from irrigated lands, including control of flooding by elevated groundwater and winter stormwater. This will relieve the City of any need to coordinate with TID regarding management of flows in the drain, and allow TID to efficiently operate and maintain its system. Second, changing the point of discharge from a low-flow, constructed agricultural irrigation drain system may reduce regulatory constraints with respect to future waste discharge requirements for the City, while allowing TID and agricultural operations that runoff or discharge to Harding Drain to separately monitor and manage water quality associated with agricultural activities, which are subject to separate regulatory requirements."

CSPA comments that the Central Valley Water Board incorrectly concludes that the relocation of the discharge does not allow for increased concentrations and loading after the discharge is moved to the San Joaquin River and points to the establishment of higher effluent limitations for copper, carbon tetrachloride,

chlorodibromomethane, and dichlorobromomethane for the discharge to the San Joaquin River than the effluent limitations for the same parameters for the discharge to Harding Drain. Central Valley Water Board staff does not concur that relocation of the discharge will result in the allowance of increased concentrations and loading. First, as described in response to Part One, Discharger Comment Nos. 2 and 5, the proposed NPDES Permit has been revised to calculate effluent limitations for copper at Discharge Point Nos. 001 and 002 based on site-specific translators derived using effluent monitoring. The resulting effluent limitations for copper are the same for both discharge points. Second, effluent limitations for carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane have not previously been applied to either the discharge to Harding Drain or the discharge to the San Joaquin River. It is not appropriate to compare the effluent limitations for the discharges to Harding Drain and the San Joaquin River. Effluent limitations for the discharge to Harding Drain are established without consideration of dilution based on the ephemeral nature of the drain and the necessity to protect beneficial uses under all discharge conditions. However, it is appropriate to allow a mixing zone and apply dilution credits for the discharge to the San Joaquin River as assimilative capacity is available, sufficient flows exist in the receiving water to dilute the discharge, and the Discharger conducted a dilution/mixing zone study. As described in the Fact Sheet (Attachment F) and in response to Part One, CSPA Comment No. 2, the authorized mixing zone for chlorodibromomethane, dichlorobromomethane, and carbon tetrachloride meets the requirements of the Basin Plan and the SIP. Compliance with the effluent limitations will ensure that beneficial uses within both receiving waters are protected.

Mixing zones do not violate state or federal antidegradation policies. (See, e.g., APU 90-004, 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.) Appropriate findings are included in the proposed NPDES Permit.

CSPA comments that the proposed NPDES Permit allows for a mixing zone for carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane rather than requiring treatment, which results in a lowering of water quality. CSPA further comments that a best practicable treatment or control (BPTC) analysis must be done on an individual constituent basis; tertiary treatment may provide BPTC for some constituents, but does not control others such as dissolved metals. CSPA also states that the Central Valley Water Board must evaluate alternatives to using chlorine such as ultraviolet (UV) disinfection as BPTC.

Central Valley Water Board staff does not concur. The discharge will not result in degradation, pollution or nuisance. No further improvements in treatment or control of pollutants are necessary to meet antidegradation requirements. Additionally, chlorination is successful treatment for wastewater disinfection as it effectively kills bacteria and pathogens. Chlorination, however, produces the chlorine byproducts constituents (such as chlorodibromomethane and dichlorobromomethane). UV disinfection does not produce chlorine byproducts; it disinfects by deactivating bacteria and pathogens from reproducing, but not actually killing the organisms. Thus, while UV disinfection does not produce chlorine byproducts, in some cases it could be less effective in treating bacteria and pathogens. Both treatment alternatives are considered BPTC although the treatment results are not equivalent.

CSPA comments that the Central Valley Water Board must analyze the impact of the relocation of the discharge on constituents that are identified on the 303(d) list as impairing the San Joaquin River and how beneficial uses will be impacted by the discharge. Central Valley Water Board staff concludes that the proposed NPDES Permit is adequately protective of the San Joaquin River. The 2006 303(d) listing for the San Joaquin River from the Merced River to the Tuolumne River includes boron, DDT, electrical conductivity, Group A Pesticides, mercury, and unknown toxicity. TMDLs and Basin Plan amendments have been developed and adopted for diazinon and chlorpyrifos runoff and salt and boron in the lower San Joaquin River. The proposed NPDES Permit includes requirements for both electrical conductivity and boron implementing the TMDL for Salt and Boron in the Lower San Joaquin River. Chlorpyrifos and diazinon have not been detected in the effluent and thus effluent limitations for these constituents have not been established. However, the proposed NPDES Permit does include new monitoring requirements that specify a lower reporting limit sufficient for comparison with the applicable diazinon and chlorpyrifos water quality objectives and for use in the additive toxicity calculation for the TMDL. If diazinon and/or chlorpyrifos are detected in the effluent at a level that is determined to cause or contribute to an exceedance of the water quality objectives in the receiving water, the proposed NPDES Permit may be reopened to include effluent limitations for diazinon and chlorpyrifos. For mercury, the proposed NPDES Permit contains an interim performance-based mass effluent limitation of 0.82 lbs/year for the effluent discharged to Harding Drain and the San Joaquin River which is based on maintaining the mercury loading at the current level until a TMDL can be established for the Delta and USEPA develops mercury standards that are protective of human health. Effluent limitations for acute and chronic toxicity have been established in the proposed NPDES Permit. Thus, Central Valley Water Board staff concludes that the proposed NPDES Permit is adequately protective of the San Joaquin River for constituents that are identified on the 303(d) list. For constituents that are not on the 303(d) list, the proposed NPDES Permit has evaluated reasonable potential to cause or contribute to an exceedance of water quality objectives for each pollutant. For those pollutants that exhibited reasonable potential to exceed water quality objectives, effluent limitations have been established in the proposed NPDES Permit. Thus, Central Valley Water Board staff

concludes that the proposed NPDES Permit is adequately protective of the beneficial uses of Harding Drain and the San Joaquin River.

CSPA Comment No. 2. Mixing Zone

CSPA comments that the tentative NPDES Permit contains an allowance for a mixing zone that does not comply with the requirements of the SIP or the Basin Plan. Specifically, CSPA comments that a mixing zone study is required by the SIP to allow dilution credits for an incompletely mixed discharge.

RESPONSE: Central Valley Water Board staff does not concur. The Discharger provided a dilution/mixing zone study prepared by Larry Walker Associates on 16 June 2009 (Technical Memorandum entitled “City of Turlock Water Quality Control Facility – San Joaquin River Discharge Mixing Zone Study and Requested Amendment to Tentative Order, NPDES No. CA0078948”). The proposed NPDES Permit includes detailed findings regarding the results of the mixing zone study. (Fact Sheet, section IV.C.2.c.) Using the Cornell Mixing Zone Expert System (CORMIX) model, the point of complete mixing downstream of the Discharger’s proposed discharge to the San Joaquin River was estimated. Based on the results of the study, the proposed NPDES Permit grants a 20:1 dilution credit for human health criteria for carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane. Although a dilution ratio of up to 5.8:1 may be allowed for the calculation of WQBELs for nitrate, the proposed NPDES Permit limits the dilution factor to 2.4, which reflects a mixing zone at which a performance-based effluent limitation can be achieved. The mixing zone and dilution credits are in compliance with the SIP, the Basin Plan and Order WQ 2009-0003 (*City of Tracy*), follow USEPA’s TSD guidance, and are adequately protective of the beneficial uses of the receiving water.

USEPA’s current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR 122.44 and 122.45). USEPA allows states to have broad flexibility in designing their mixing zone policies. Primary guidance on determining mixing zone and dilution credits is provided by the SIP, the TSD, and the Basin Plan. For NPDES permits in California, the SIP guidance supercedes the USEPA guidance for priority pollutants, to the extent that it addresses a particular procedure. However, for non-priority pollutants, the more stringent of the Basin Plan or USEPA guidance may apply.

In granting a mixing zone, the SIP states that a mixing zone shall be as small as practicable, and meet the conditions provided in section 1.4.2.2 as follows:

“A: A mixing zone shall not:
(1) compromise the integrity of the entire water body;

- (2) cause acutely toxic conditions to aquatic life passing through the mixing zone;*
- (3) restrict the passage of aquatic life;*
- (4) adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;*
- (5) produce undesirable or nuisance aquatic life;*
- (6) result in floating debris, oil, or scum;*
- (7) produce objectionable color, odor, taste, or turbidity;*
- (8) cause objectionable bottom deposits;*
- (9) cause nuisance;*
- (10) dominate the receiving water body or overlap a mixing zone from different outfalls; or*
- (11) be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (Resolution No. 88-63), this SIP supersedes the provisions of that policy."*

The proposed NPDES Permit only allows a mixing zone for human health criteria (i.e., long-term criteria). The proposed NPDES Permit does not allow mixing zones for compliance with aquatic toxicity criteria. The mixing zone is as small as practicable, will not compromise the integrity of the entire water body, restrict the passage of aquatic life, dominate the waterbody or overlap existing mixing zones from different outfalls. The City of Modesto was granted a mixing zone for human health criteria in Order No. R5-2008-0059. The City of Modesto discharge is located approximately 5.5 miles downstream from the proposed outfall to the San Joaquin River. The estimated size of the human health mixing zone for carbon tetrachloride, chlorodibromomethane, and dichlorobromomethane for the Discharger is 3,048 meters (just under 2 miles). The edge of the mixing zone for nitrate representing the dilution factor of 2.4 is 29.7 meters (just under 100 feet) downstream of the outfall to the San Joaquin River. Therefore, the mixing zones do not overlap. There are no municipal or known private drinking water supply intakes downstream of the discharge from the Facility to the San Joaquin River until the water intakes in the Delta located downstream of Vernalis.

The discharge will not cause acutely toxic conditions to aquatic life passing through the mixing zone, because the proposed NPDES Permit does not allow an acute aquatic life mixing zone and requires compliance with an acute toxicity effluent limitation that requires acute bioassays using 100% effluent (i.e., no dilution). Compliance with the acute toxicity effluent limitation assures the effluent is not acutely toxic.

The discharge will not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws, because the proposed NPDES Permit does not allow mixing zones for compliance with aquatic toxicity criteria. The Discharger must meet

stringent end-of-pipe effluent limitations for constituents that demonstrated reasonable potential to exceed aquatic toxicity criteria (i.e., copper, lead, silver, zinc, selenium, ammonia, and aluminum).

The discharge will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum, produce objectionable color, odor, taste, or turbidity, cause objectionable bottom deposits, or cause nuisance, because the proposed NPDES Permit requires end-of-pipe effluent limitations (e.g., for BOD₅ and TSS) and discharge prohibitions to prevent these conditions from occurring.

As suggested by the SIP, in determining the extent of or whether to allow a mixing zone and dilution credit, the Central Valley Water Board has considered the presence of pollutants in the discharge that are carcinogenic, mutagenic, teratogenic, persistent, bioaccumulative, or attractive to aquatic organisms, and concluded that the allowance of the mixing zone and dilution credit is adequately protective of the beneficial uses of the receiving water.

The mixing zone therefore complies with the SIP. The mixing zone also complies with the Basin Plan, which requires that the mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zone, the Central Valley Water Board has considered the procedures and guidelines in USEPA's *Water Quality Standards Handbook*, 2d Edition (updated July 2007), section 5.1, and section 2.2.2 of the TSD. The SIP incorporates the same guidelines.

The Fact Sheet (Attachment F) of the proposed NPDES Permit has been updated to reflect the Discharger's 16 June 2009 Mixing Zone Study and to clarify the mixing zone/dilution requirements.

Mixing zones do not violate state or federal antidegradation policies. (APU 90-004, p. 2; USEPA *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. (APU 90-004, p. 2.) This finding has been added. The mixing zone meets all requirements of the Basin Plan and the SIP.

CSPA Comment No. 3. Backsliding for Settleable Solids

CSPA comments that the tentative NPDES Permit does not contain effluent limitations for settleable solids which are present in the previous NPDES Permit contrary to the antibacksliding requirements of the CWA and 40 CFR 122.44 (I)(1).

RESPONSE: CSPA comments that the removal of effluent limitations for settleable solids constitutes backsliding. The previous NPDES Permit, Order No. 5-01-122, included an AMEL and an average daily effluent limitations for settleable solids of 0.1 ml/L and 0.2 ml/L, respectively. Settleable solids have not been detected in the effluent based on recent monitoring data conducted between October 2006 through April 2008. The Facility is a tertiary wastewater treatment plant. The regulation of settleable solids is not always necessary for tertiary treated wastewater. Settleable solids monitoring data provides information regarding the performance of a secondary system that is dependent on clarification and/or settling to meet technology-based effluent limitations. For tertiary treatment facilities, such as the Facility, that treat wastewater to a concentration of TSS of less than 10 mg/L and turbidity to Title 22 standards, regulating settleable solids is not necessary.

Based on site-specific information that was not available at the time that Order No. 5-01-122 was issued, including recent monitoring data conducted subsequent to Facility upgrades to provide tertiary treatment, settleable solids no longer demonstrates reasonable potential to cause or contribute to an exceedance of a water quality objective. Therefore, relaxation of effluent limitations is allowed under CWA section 402(o)(2)(B)(i). CWA section 303(d)(4) allows for less stringent limitations in waters attaining water quality standards if the relaxation is consistent with antidegradation requirements. The discharge does not have the reasonable potential to cause or contribute to an exceedance of water quality standards for settleable solids in the receiving water and all beneficial uses will be maintained. Elimination of effluent limitations for settleable solids is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Any impact on existing water quality will be insignificant. Therefore, relaxation of effluent limitations is allowed under CWA section 303(d)(4).

CSPA Comment No. 4. Backsliding for Turbidity

CSPA comments that the tentative NPDES Permit replaces effluent limitations for turbidity which were present in the previous NPDES Permit contrary to the antibacksliding requirements of the CWA and 40 CFR 122.44 (I)(1).

RESPONSE: CSPA comments that movement of effluent limitations for turbidity from the previous Order No. 5-01-122 to Construction, Operation, and Maintenance specifications constitutes backsliding. Central Valley Water Board staff does not concur. The State Water Board held in Order WQ-2009-0012 (*City of Stockton*) that similar modifications did not constitute backsliding. As stated in the Fact Sheet (Attachment F), turbidity testing is a quick way to monitor the effectiveness of

treatment filter performance, and to signal the Discharger to implement operational procedures to correct deficiencies in filter performance. Higher effluent turbidity measurements do not necessarily indicate that the effluent discharge exceeds the water quality criteria/objectives for pathogens (i.e., bacteria, parasites, and viruses), which are the principal infectious agents that may be present in raw sewage. Therefore, turbidity is not a valid indicator parameter for pathogens. Furthermore, the former turbidity limitations were not imposed to protect the receiving water from excess turbidity, and were not even related to turbidity in the receiving water. Thus, the former turbidity limitations were not technology-based effluent limitations or WQBELs for either pathogens or turbidity.

On the other hand, total coliform organisms are an indicator of the level of pathogens in the effluent. Therefore, effluent limitations for total coliform organisms are necessary to control the discharge of pathogens, and have been included in the proposed NPDES Permit.

WQBELs for turbidity are not required because the effluent does not have a reasonable potential to cause or contribute to an exceedance of the applicable water quality objectives for turbidity. Therefore, operational requirements for turbidity are appropriately included as a provision in the proposed NPDES Permit rather than effluent limitations. Order No. 5-01-122 included effluent limitations for turbidity. The operational turbidity requirements in proposed NPDES Permit are an equivalent permit condition that is not less stringent than the turbidity limitations in previous Order No. No. 5-01-122. Therefore, the removal of the turbidity effluent limitations does not constitute backsliding.

CSPA Comment No. 5. Annual Average Effluent Limitations

CSPA comments that effluent Limitations for aluminum, iron and manganese are improperly regulated as an annual average contrary to 40 CFR 122.45 (d)(2) and common sense.

RESPONSE: Central Valley Water Board staff does not concur. The effluent limitations for aluminum, iron, and manganese are based on Secondary MCLs which address aesthetics such as taste and odor and not on aquatic life criteria. Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations (CCR). 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 effluent limitations and AMELs because such limitations would be more stringent than necessary to protect the MUN use. Central Valley Water Board staff has determined that an averaging period similar to what is used by DPH 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 No. 6. Mass-Based Effluent Limitations

CSPA comments that the tentative NPDES Permit fails to contain mass-based effluent limitations for copper, carbon tetrachloride, chlorodibromomethane, dichlorobromomethane, nitrate, aluminum, boron, iron and manganese as required by 40 CFR 122.45(b).

RESPONSE: 40 CFR 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 copper, carbon tetrachloride, chlorodibromomethane, dichlorobromomethane, nitrate, aluminum, boron, iron, and manganese in the proposed NPDES Permit are based on water quality standards and objectives. These are expressed in terms of concentration. Pursuant to 40 CFR 122.25(f)(1)(ii), expressing the effluent limitations in terms of concentration is in accordance with federal regulations.

Mass limitations for oxygen demanding substances, bioaccumulative substances, and constituents with an associated 303(d) listing are included in the proposed NPDES Permit. The proposed NPDES Permit includes mass limitations for 1) BOD₅, TSS, and ammonia since they are oxygen demanding substances, 2) mercury since it is a bioaccumulative constituent and a TMDL is pending, and (3) selenium since it is a bioaccumulative constituent. For those pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based (i.e., copper, lead, silver, zinc, carbon tetrachloride, chlorodibromomethane, dichlorobromomethane, chloride, nitrate, aluminum, boron,

iron, and manganese), mass-based effluent limitations are not included in the proposed NPDES Permit.

CSPA Comment No. 7. Oil and Grease

CSPA comments that the proposed NPDES Permit does not contain an effluent limitation for oil and grease in violation of 40 CFR 122.44 and CWC section 13377.

RESPONSE: CSPA comments that the removal of effluent limitations for oil and grease constitutes backsliding. The previous NPDES Permit, Order No. 5-01-122, included an AMEL and an average daily effluent limitation for oil and grease of 10 mg/L and 15 mg/L, respectively. The MEC for oil and grease was 11 mg/L, based on 38 samples collected between October 2006 and April 2008. The highest monthly average for oil and grease was 9.15 mg/L. However, since November 2007, oil and grease has been reported as non-detect (at an analytical detection level of 5.0 mg/L). Central Valley Water Board staff does not concur that effluent limitations for oil and grease are necessary simply because the Facility is a wastewater treatment plant. The Discharger is required to be covered under State Water Board Order 2006-0003, a Statewide General WDR for Sanitary Sewer Systems, which requires each enrollee to evaluate its service area to determine whether a fats, oils, and grease (FOG) control program is needed. If an enrollee determines that a FOG control program is not needed, the enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. The Discharger's compliance with the requirements of WQO 2006-0003 will ensure minimal amounts of oil and grease are discharged into the Facility. The proposed NPDES Permit also contains narrative receiving water limitations for oil and grease and floating materials.

Based on site-specific information that was not available at the time that Order No. 5-01-122 was issued, including recent monitoring data conducted subsequent to Facility upgrades to provide tertiary treatment and implementation of a FOG program in accordance with the requirements of WQO 2006-0003, oil and grease no longer demonstrates reasonable potential to cause or contribute to an exceedance of a water quality objective. Therefore, relaxation of effluent limitations is allowed under CWA section 402(o)(2)(B)(i). CWA section 303(d)(4) allows for less stringent limitations in waters attaining water quality standards if the relaxation is consistent with antidegradation requirements. The discharge does not have the reasonable potential to cause or contribute to an exceedance of water quality standards for oil and grease in the receiving water and all beneficial uses will be maintained. Elimination of effluent limitations for oil and grease is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Any impact on existing water quality will be insignificant. Therefore, relaxation of effluent limitations is allowed under CWA section 303(d)(4).

CSPA Comment No. 8. Acute Toxicity

CSPA comments that the tentative NPDES Permit contains an effluent limitation for acute toxicity that allows mortality to aquatic life that exceeds the Basin Plan water quality objective and does not comply with 40 CFR 122.44 (d)(1)(i) or the CWA.

RESPONSE: The acute whole effluent toxicity (WET) limitations establish additional thresholds to control acute toxicity in the effluent: survival in one test no less than 70 percent and a median of no less than 90 percent survival in three consecutive tests. Some in-test mortality can occur by chance. To account for this, the acute toxicity test acceptability criteria allow 10 percent mortality (requires 90 percent survival) in the control. Thus, the acute toxicity limitations allow for some test variability, but impose ceilings for exceptional events (i.e., 30 percent mortality or more), and for repeat events (i.e., median of three events exceeding mortality of 10 percent). These effluent limitations are consistent with USEPA guidance document titled "Guidance for NPDES Permit Issuance", dated February 1994, which states the following:

"In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc."

The appropriateness of the acute toxicity effluent limitations was also addressed in State Water Board Order WQ 2008-0008 (*City of Davis*). In W 2008-0008, the State Water Board upheld the Central Valley Water Board's implementation of the acute toxicity effluent limitations.

CSPA Comment No. 9. Chronic Toxicity

CSPA comments that the tentative NPDES Permit does not contain enforceable effluent limitations for chronic toxicity and therefore does not comply with 40 CFR 122.44(d)(1)(i) or the SIP.

RESPONSE: The chronic toxicity issue was addressed in State Water Board Order WQ 2008-0008 (*City of Davis*) adopted on 2 September 2008, and WQO 2003-0012 (*Los Coyotes*). With regard to the need for a numeric chronic toxicity effluent limit, WQ 2008-0008 states, "We have already addressed this issue in a prior order and, once again, we conclude that a numeric effluent limitation for chronic toxicity is not appropriate at this time." Based on this recent Water Quality Order, the proposed NPDES Permit includes a narrative chronic toxicity effluent limitation in section IV.A.1.d. Consistent with the SIP and the *Los Coyotes* order, the proposed NPDES Permit includes compliance determination language to implement the narrative

limitation. This language states, “*Compliance with the accelerated monitoring and TRE/TIE provisions of Provision VI.C.2.a shall constitute compliance with effluent limitation IV.A.1.k for chronic whole effluent toxicity.*” (Provision VII.G.)

The Los Coyotes and City of Davis Water Quality Orders require narrative effluent limitations for chronic toxicity. The suggested language in the orders is, “*There shall be no chronic toxicity in the effluent discharge.*” The orders, however, do not explain how to determine compliance with this limitation. Under the most literal interpretation, a result of even 1.1 chronic toxicity units (TUc) would be a violation of the narrative limitation. Reading the narrative limitation to mean that any excursion above 1 TUc violates the narrative limitation has the same practical effect as a numeric limitation of 1 TUc. This is not appropriate, because the State Water Board rejected the numeric approach in the Los Coyotes order. This literal reading also ignores dilution, making the limitation overly stringent. Disallowing dilution is inconsistent with effluent limitations for specific priority pollutants, which can include a dilution factor. Further, WET testing is imprecise by nature, and one sample is not necessarily indicative of chronic toxicity. For this reason, the SIP and the Los Coyotes order rely on toxicity reduction evaluation/toxicity identification evaluation (TRE/TIE) requirements to ensure a discharge does not cause or contribute to chronic toxicity.

Where WET testing indicates potential chronic toxicity, the SIP (and the proposed NPDES Permit) requires additional accelerated monitoring. The lack of precision in WET testing could be addressed, in part, by using all the accelerated monitoring data to demonstrate compliance with the limitation. In that case, any time the monitoring demonstrated a need for a TRE/TIE, the Discharger would be in violation of the narrative effluent limitation. This would be the case even if the Discharger commenced a TRE/TIE and complied with all applicable requirements of the SIP and the proposed NPDES Permit for addressing chronic toxicity. Again, however, this is indistinguishable from a numeric limit of 1 TUc. It is also inconsistent with the State Water Board’s focus on the TRE/TIE as the way to determine appropriate limits and prevent chronic toxicity.

In order to assure consistency with the SIP and Los Coyotes orders, the accelerated testing and TRE/TIE requirements should be viewed as an integral part of the effluent limitation. In the Los Coyotes order, the State Water Board noted that best management practices (BMPs) may substitute for numeric effluent limitations when developing numeric limitations is infeasible. The State Water Board then concluded that numeric toxicity limitations are infeasible.¹ The TRE/TIE is the key to addressing chronic toxicity under the Los Coyotes approach. Relying on accelerated testing and the TRE/TIE to satisfy the narrative effluent limitation is a BMP-based approach and therefore consistent with the reasoning in the Los Coyotes order.

¹ Order No. WQ 2003-0012, pp. 9-10.

The State Water Board required the narrative effluent limitation in addition to BMPs because “*NPDES permits must contain effluent limitations that will achieve compliance with water quality standards that have . . . reasonable potential . . .*”¹ The intent of the effluent limitation was to “*ensure that the requirements to perform a TRE/TIE and to eliminate toxicity are clear and enforceable.*”² The compliance determination language is consistent with the State Water Board’s purpose for requiring the effluent limitation.

During the TRE/TIE process, the Discharger is subject to the acute toxicity effluent limitation and a chronic toxicity receiving water limitation. (Permit, § V.A.16.) Taken together, these provisions allow the Discharger time to address a newly-discovered chronic toxicity problem without violating the permit, consistent with the State Water Board’s permitting approach for chronic toxicity.

CSPA Comment No. 10. Hardness-Based Metals

CSPA comments that the tentative NPDES Permit establishes effluent limitations for metals based on the hardness of the effluent as opposed to the ambient upstream receiving water hardness as required by the CTR at 40 CFR 131.38(c)(4).

RESPONSE: Central Valley Water Board staff does not concur. As described in section IV.C.2.b of the Fact Sheet (Attachment F), upstream receiving water hardness data is not available in Harding Drain that would allow for the calculation of criteria representing the reasonable worst-case conditions of the receiving water. Because Harding Drain is an effluent dominated stream and upstream hardness data is not available, the lowest hardness of the effluent (89 mg/L as CaCO₃) was used to represent a reasonable worst case hardness value under critical low flow conditions for calculating water quality criteria for metals for the discharge to Harding Drain at Discharge Point No. 001. Consequently, the proposed NPDES Permit contains effluent limitations for copper for the discharge to Harding Drain at Discharge Point No. 001.

As explained in detail in the Fact Sheet (Attachment F), for the discharge to the San Joaquin River at Discharge Point No. 002, the reasonable worst-case ambient hardness was used to calculate the CTR hardness dependent metals criteria. The downstream ambient hardness is appropriate and allowed by the SIP and CTR. The criteria for hardness-dependent metals must be based on the reasonable worst-case ambient hardness in accordance with the SIP³, the CTR¹ and State Water Board

¹ *Id.*, p. 9.

² *Id.*, p. 10.

³ The SIP does not address how to determine the hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water.

Order No. WQO 2008-0008 (*City of Davis*). The SIP and the CTR require the use of “receiving water” or “actual ambient” hardness, respectively, to determine effluent limitations for these metals. (SIP section 1.2; 40 CFR 131.38(c)(4), Table 4, note 4.) The CTR does not define whether the term “ambient,” as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions. Therefore, the State Water Board concluded that where reliable, representative data are available, the hardness value for calculating criteria can be the downstream receiving water hardness, after mixing with the effluent (Davis Order, p. 11).

In the Davis Order, the State Water Board points out that the requirements for selecting the appropriate hardness for calculating the CTR metals criteria is conflicting in the CTR and the SIP. The CTR requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones (e.g., 1Q10 and 7Q10 receiving water low flows). On the other hand, the SIP’s steady-state method requires the selection of critical or worst-case parameters. These can be in conflict for hardness, because often in receiving waters the critical worst-case hardness conditions do not coincide with the design low flow conditions. The lowest hardness conditions typically occur during high river flows, due to the low hardness in surface runoff from precipitation or snowmelt². The State Water Board concludes that, “*Thus, the Central Valley Water Boards have considerable discretion in the selection of hardness. Regardless of which method is used for determining hardness, the selection must be protective of water quality criteria, given the flow conditions under which the particular hardness exists.*” (*Id.*, p.10.).

In the proposed NPDES Permit, the reasonable worst-case estimated downstream ambient hardness was used for calculating the CTR criteria. As shown in Tables F-5 through F-8, the calculated CTR criteria are protective under all discharge and flow conditions assuming worst-case conditions for upstream ambient hardness and metals concentrations.

CSPA comments that since a lower effluent limit would be required using the minimum observed upstream ambient hardness to calculate the CTR criteria, that this means a mixing zone and dilution is required. This is not accurate. Although a lower effluent limit can be calculated, dilution is not necessarily needed. A mixing zone is a zone near the point of discharge where criteria are not met. A mixing zone is needed when the effluent exceeds criteria and requires mixing with the receiving water before the criteria are met. As shown in Tables F-5 through F-8 of the Fact Sheet (Attachment F), considering the known conditions and using reasonable worst-case assumptions, the effluent does not exceed the criteria and any mixture of

¹ The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO₃), or less, the actual ambient hardness of the surface water must be used. It further requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones.

² This has been documented for the San Joaquin River near the proposed Turlock discharge. The lowest receiving water hardness occurs during flood flows when there is massive dilution.

effluent and receiving water does not exceed the criteria. A mixing zone is therefore not necessary in this situation.

CSPA Comment No. 11. Bis (2-ethylhexyl) Phthalate

CSPA comments that the tentative NPDES Permit fails to contain an effluent limitation for bis (2-ethylhexyl) phthalate despite a clear reasonable potential to exceed water quality standards in violation of 40 CFR 122.44.

RESPONSE: Central Valley Water Board staff does not concur. As discussed in the Fact Sheet (Attachment F, section IV.C.3.h), there is insufficient information to conduct a RPA due to uncertainty in the sample results. Bis (2-ethylhexyl) phthalate samples can be easily contaminated when plastic containers are used or by the use of rubber gloves. Bis (2-ethylhexyl) phthalate was detected in the effluent five times with an MEC of 17.5 µg/L, based on seven samples collected between October 2006 and April 2008. However, based on the review of the lab data sheets for the samples, each of the detected samples had the data qualifiers “B”, “GG”, and/or “O-01” which indicate that the detected samples are suspected to be the result of contamination. Since bis (2-ethylhexyl) phthalate is a common contaminant of sample containers, sampling apparatus, and analytical equipment, and sources of the detected bis (2-ethylhexyl) phthalate may be from plastics used for sampling or analytical equipment, it is uncertain whether reasonable potential actually exists and therefore effluent limitations for bis (2-ethylhexyl) phthalate are not being established at this time. Instead of limitations, additional monitoring has been established for bis (2-ethylhexyl) phthalate. The Order requires the Discharger to take appropriate steps to assure that sampling containers, sampling apparatuses, and analytical equipment are not sources of the detected contaminant. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, then the proposed NPDES Permit may be reopened and modified by adding an appropriate effluent limitation.

CSPA Comment No. 12. Temperature Study

CSPA comments that the tentative NPDES Permit fails to require a site-specific study for temperature as was required by State Water Board Order WQO 2002-0016.

RESPONSE: Previous Order No. 5-01-122 for the Facility contained a receiving water limitation for temperature based on a water quality objective contained in the Basin Plan, which states that “*At no time shall the temperature of ... WARM intrastate waters be increased more than 5°F above natural receiving water temperature.*” In petitioning Order No. 5-01-122, the Discharger objected to the receiving water limitation for temperature. The Discharger comments that the limitation, which regulates increases over ambient temperature, is inappropriate because the Basin Plan objective addresses “natural receiving water temperature” and that Harding Drain has no natural temperature. In Order WQO 2002-0016, the

State Water Board concluded that the Central Valley Water Board should impose appropriate temperature controls on the discharge based upon a site-specific study. The State Water Board stayed the receiving water limitation for temperature. In light of the fact that the Discharger is planning to move the discharge from Harding Drain to the San Joaquin River during the permit term, a site-specific study to determine appropriate temperature limitations was not required in the proposed NPDES Permit.

CSPA comments that the tentative NPDES Permit fails to provide an explanation of why elevated temperatures would not have a similar detrimental impact on aquatic life in surface waters regardless of the location. WQO 2002-0016 did not conclude that elevated temperature would have a detrimental effect in Harding Drain. It merely stated that *if* a temperature limitation was necessary for the Harding Drain discharge, a temperature study was necessary to support the limitation. Central Valley Water Board staff does not concur that an evaluation of temperature impacts is required in the San Joaquin River. The San Joaquin River has a “natural receiving water temperature” that has been determined with the Discharger’s existing monitoring of the receiving water temperature, and the Basin Plan objective is clearly applicable. Thus, the proposed NPDES Permit establishes a receiving water limitation for discharges to the San Joaquin River based the Basin Plan objective for temperature. Compliance with this receiving water limitation will ensure that there are no adverse impacts to beneficial uses in the San Joaquin River. As determined in WQO 2002-0016, it is still inappropriate to apply the Basin Plan objective to the Harding Drain discharge because Harding Drain has no natural temperature. At this point, there is no reason to prepare a study to develop a new limitation for the temporary discharge location.

CSPA also comments that the Central Valley Water Board has ignored the State Water Board’s direct order to conduct a site-specific temperature study. Central Valley Water Board staff believes that the study would be appropriate if the Discharger were to continue discharging to Harding Drain, which was the circumstance under which the State Water Board concluded that a site-specific study was required. However, given that the discharge location will be relocated during the life of the proposed NPDES Permit, and most likely before an adequate site-specific study could be conducted, Central Valley Water Board staff concludes that it is not appropriate to require the Discharger to expend additional resources to conduct a study that will be moot upon its completion.

Central Valley Water Board staff acknowledges that the proposed NPDES Permit allows for emergency discharges to Harding Drain subsequent to the commencement of discharges to the San Joaquin River. However, as described in the Fact Sheet of the proposed permit, and based on conclusions of the January 2004 final-draft Use Attainability Analysis for Harding Drain, Central Valley Water Board staff believes that temperature impacts in the Harding Drain are more appropriately assessed using longer averaging periods (i.e., annual average). The emergency discharges authorized by the proposed NPDES Permit will be infrequent, short-term in duration, and low volume such that temperature impacts in Harding

Drain would be negligible. The site-specific temperature study for Harding Drain has not been required in the proposed NPDES Permit due to the Discharger waiting for the last pending approval from the U.S. Army Corp of Engineers to commence discharge at location 002.

CSPA Comment No. 13. Statistical Multipliers

CSPA comments that the tentative NPDES Permit contains an inadequate RPA by using incorrect statistical multipliers as required by 40 CFR 122.44(d)(1)(ii) and that the tentative NPDES Permit fails to contain adequate effluent limitations as required by 40 CFR 122.44.

RESPONSE: Until adoption of the SIP by the State Water Board, USEPA's TSD was the normal protocol followed for permit development for all constituents. The SIP is required only for CTR and National Toxics Rule (NTR) constituents and prescribes a different protocol when conducting an RPA, but is identical when developing WQBELs. For some time after SIP adoption, SIP protocols were used for CTR/NTR constituents, and TSD protocols were used for non-CTR/NTR constituents. While neither protocol is necessarily better or worse in every case, using both protocols in the same permit has led to confusion by dischargers and the public, and greater complexity in writing permits. Currently there is no State Water Board or Central Valley Water Board policy that establishes a recommended or required approach to conduct an RPA or establish WQBELs for non-CTR/NTR constituents. However, the State Water Board has held that the Central Valley Water Board may use the SIP as guidance for water quality-based toxics control. The SIP states in the introduction "*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency.*" Therefore, for consistency in the development of NPDES permits, the Central Valley Water Board has begun to use the RPA procedures from the SIP to evaluate reasonable potential for both CTR/NTR and non-CTR/NTR constituents. Consistent with the RPA procedure from the SIP, the RPA for the proposed permit was not performed using statistical multipliers to determine if effluent limitations are needed.

**PART TWO: REDLINE/STRIKEOUT OF THE 9 DECEMBER 2008 TENTATIVE
NPDES PERMIT**

CITY OF TURLOCK (DISCHARGER) COMMENTS

Discharger Comment No. 1. Compliance Schedule for Electrical Conductivity

The 9 December 2008 tentative NPDES Permit contained final effluent limitations for electrical conductivity for Discharge Point Nos. 001 and 002 with compliance required by 1 January 2016. The Discharger submitted comments to the Central Valley Water Board on 9 January 2009 requesting that the compliance schedule be modified to 28 July 2022 (all water year types, except critically dry) or 28 July 2026 (for critically dry water years), to be consistent with the Salt and Boron TMDL and prior permitting action taken by the Central Valley Water Board for the City of Modesto (the only other municipal discharge assigned a waste load allocation (WLA) in the Salt and Boron TMDL). The initial compliance schedule period was shortened to 1 January 2016 in an effort to encourage the Discharger to take near term, pro-active steps towards reducing salinity discharges. The Discharger is concerned that the shortened compliance schedule would not allow for an orderly phased approach to reducing salinity discharges, as contemplated by the TMDL, commencing with source control, and concluding with potential installation of reverse osmosis/micro-filtration technology (the least preferred option, environmentally and economically), should source control efforts not achieve sufficient reductions to ensure compliance.

The shortened compliance schedule does not allow the Discharger to meaningfully implement and evaluate source control efforts, and subsequently address further reduction via increased treatment processes, if necessary. As such, the Discharger anticipates the need to immediately start investigating and implementing costly and environmentally questionable treatment upgrades that may be unnecessary should source control efforts succeed.

The Discharger requests that the compliance schedule for electrical conductivity be extended to 28 July 2022 (all water year types, except critically dry) or 28 July 2026 (for critically dry water years), but that a more robust schedule of interim deadlines be included in the NPDES Permit, to provide the Central Valley Water Board and the public with assurance that the Discharger is undertaking timely and necessary source control steps towards reducing salinity discharges so as to comply with the assigned WLA. If source control efforts are successful, the Discharger will achieve compliance earlier than the compliance schedule deadline, but if additional controls are necessary, the longer compliance period will provide the Discharger time to implement those additional complex controls. The Discharger proposed the interim source control deadlines to be included in the Order.

RESPONSE: See response to Part One, Discharger Comment No. 14.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS

CSPA Comment No. 1. Effluent Limitations for Copper

CSPA comments that the effluent limitations for copper have been revised to be less stringent based on the incorrect hardness and an undefined metal translator.

RESPONSE: In regards to the issue of the appropriate hardness used to determine reasonable potential to exceed water quality criteria and calculate effluent limitations for copper, see response to Part One, CSPA Comment No. 10.

Central Valley Water Board staff does not concur that an “undefined” metal translator was used to determine effluent limitations for copper. As described further in section IV.C.2.d of the Fact Sheet (Attachment F) and in response to Part One, Discharger Comment Nos. 2 and 5, the metal translators for copper, lead, and zinc were based on the findings of the Discharger’s 16 July 2008 Metals Translator Report. The Discharger’s study followed USEPA’s *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (EPA 823-B-96-007) to develop translators for copper, lead, and zinc. The USEPA guidance recommends two methods for calculating metal translators. The direct-ratio method is based on measured ratios of dissolved to total recoverable metals in the downstream receiving water outside the mixing zone. The second method is to be used if the translator is found to be dependent on TSS and involves regression equations relating the fraction of the dissolved metal to TSS. The final translators selected for copper, lead, and zinc were based on the direct-ratio method. USEPA recommends that that translators be calculated as the average of the low flow values, or as the 95th percentile highest dissolved fraction for all samples, however, the SIP requires that the median (50th percentile) of ambient values be used to develop the translator for chronic criteria and that the 90th percentile highest dissolved fraction be used to develop the translator for acute criteria. When determining the 50th and 90th percentile values, the translator guidance suggests assuming non-detect values as one-half the detection level. However, in order to determine the 50th and 90th percentile values, a regression on order statistics (ROS) technique was used, which has been found by several studies to be more appropriate than the assumptions suggested in the translator guidance. Although the 16 July 2008 Metals Translator Report did not provide sufficient detail as to how this technique was applied, the Discharger provided the supporting information in its 21 November 2008 Response to Comments on City of Turlock’s Metals Translator Report. The translators used to calculate water quality criteria for copper, lead, and zinc in the proposed NPDES Permit were determined in accordance with USEPA guidance and are consistent with the requirements of the SIP.

CSPA Comment No. 2. Metals Translator Study

CSPA comments that the RPA for copper, lead, and zinc and the effluent limitations for copper are based on a metals translator study that has not been sufficiently defined in accordance with 40 CFR 124.8.

RESPONSE: See response to Part Two, CSPA Comment No. 1.

CSPA Comment No. 3. Effluent Limitations for Zinc

CSPA comments that the tentative NPDES Permit fails to include an effluent limitation for zinc as required by 40 CFR 122.44 and the tentative NPDES Permit should not be adopted in accordance with CWC section 13377.

RESPONSE: Central Valley Water Board staff does not concur. Using the reasonable worst-case representative ambient hardness of 89 mg/L as CaCO₃, as described in section IV.C.2.b of the Fact Sheet (Attachment F) and in response to Part One, CSPA Comment No. 10, and the default conversion factors, the applicable chronic criterion (maximum 4-day average concentration) is 107 µg/L and the applicable acute criterion (maximum 1-hour average concentration) is 106 µg/L, as dissolved concentrations.

As discussed in section IV.C.2.d of the Fact Sheet (Attachment F), the applicable site-specific acute and chronic translators for the discharge to Harding Drain and the San Joaquin River are 1.00/fD and 1.04/fD, respectively. Using the site-specific translators, the applicable acute criterion is 106 µg/L and the applicable chronic criterion is 111 µg/L, as total recoverable.

The MEC for total zinc was 62.9 µg/L, based on 31 samples collected between October 2006 and April 2008 and reported in the Discharger's SMRs and Metals Translator Report. The maximum observed upstream receiving water total zinc concentration in Harding Drain was 80 µg/L, based on six samples collected between May 2005 and April 2008. The maximum observed upstream receiving water total zinc concentration in the San Joaquin River was 12 µg/L, based on 26 samples collected between May 2005 and April 2008.

The MEC for dissolved zinc was 61 µg/L, based on 12 samples collected between October 2006 and April 2008. Upstream receiving water dissolved zinc monitoring was not available. The maximum observed upstream receiving water dissolved concentration in the San Joaquin River was 1.54 µg/L, based on 20 samples collected between May 2005 and April 2008.

Because neither total or dissolved zinc concentrations in the effluent exceed the applicable criteria for the discharges to Harding Drain and the San Joaquin River, the discharge does not have a reasonable potential to cause or contribute to an in-

stream excursion above the CTR criterion for zinc for discharges to either Harding Drain or the San Joaquin River.

CSPA Comment No. 4. Effluent Limitations for Lead

CSPA comments that the tentative NPDES Permit fails to contain an effluent limitation for lead in violation of the CTR at 40 CFR 122.44, CWC section 13377, and the SIP.

RESPONSE: Central Valley Water Board staff does not concur that effluent limitations should be established for lead at Discharge Point No. 001 for the discharge to Harding Drain. As described in section IV.C.3.r of the Fact Sheet (Attachment F), lead in the discharge to Harding Drain does not exhibit reasonable potential to exceed water quality criteria for lead. Therefore, effluent limitations are not necessary.

Central Valley Water Board staff concurs that effluent limitations for lead are necessary for the discharge to the San Joaquin River at Discharge Point No. 002. As described further section IV.C.3.r of the Fact Sheet (Attachment F), lead in the discharge to the San Joaquin River has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life and effluent limitations have been established in the proposed NPDES Permit.

CSPA Comment No. 5. Mixing Zone

CSPA comments that the tentative NPDES Permit grants a mixing zone for effluent limitations for human health-based criteria that appears to be based on “estimates” contained in the Discharger’s “Antidegradation Analysis” despite that an “approved dilution/mixing zone study” has not been submitted. CSPA comments that the tentative NPDES Permit contains an allowance for a mixing zone that does not comply with the requirements of the SIP or the Basin Plan.

RESPONSE: See response to Part One, CSPA Comment No. 2.

CSPA Comment No. 6. Effluent Limitations for Chloride

CSPA comments that the tentative NPDES Permit adds language to the chloride finding that defends discarding data from the RPA based on statistical definitions contrary to 40 CFR 122.44(d) and section 1.2 of the SIP.

RESPONSE: Central Valley Water Board staff does not concur that chloride exhibits reasonable potential to exceed water quality objectives for the discharge to Harding Drain. Section 1.2 of the SIP states that “*when implementing the provisions of this Policy, the RWQCB shall use all available, valid, relevant, representative data*”

and information, as determined by the RWQCB. The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy. Instances where such consideration is warranted include, but are not limited to, the following: evidence that a sample has been erroneously reported or is not representative of effluent or ambient receiving water quality; questionable quality control/quality assurance practices; and varying seasonal conditions.” Chloride was detected in the effluent at a concentration of 384 mg/L. However, this sample was considered an outlier and was not used in the RPA. The dataset was represented by a standard deviation of 13 and a mean of 123 mg/L. Because 4 standard deviations is considered an outlier, the high sample concentration, which was 20 standard deviations from the mean, is considered an outlier. Without the outlier, chloride concentrations in the effluent ranged from 105 mg/L to 154 mg/L, with an average of 123 mg/L, for 32 samples collected by the Discharger from October 2006 through April 2008. Therefore, chloride in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL or USEPA’s National Ambient Water Quality Criteria for the protection of freshwater aquatic life for chloride for the discharge to Harding Drain.

Because chloride exceeds USEPA’s National Ambient Water Quality Criteria for the protection of freshwater aquatic life upstream in the San Joaquin River, and chloride was detected in the effluent, chloride does have a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life in the San Joaquin River resulting in a violation of the Basin Plan’s narrative toxicity objective. Therefore, effluent limitations for chloride in the discharge to the San Joaquin River are included in the proposed NPDES Permit.

PART THREE: 13 AUGUST 2009 TENTATIVE NPDES PERMIT

CITY OF TURLOCK (DISCHARGER) COMMENTS

Discharger Comment No. 1. Title 22 Engineering Report and Reclamation Specifications

The Discharger comments that the tentative NPDES Permit contains an incomplete description of recycled water use and requests that the permit be revised to include an additional recycled water user. The Discharger comments that the sections requiring preparation of a Title 22 Engineering Report should be removed from the tentative NPDES Permit, as the Discharger has already prepared a Title 22 Engineering Report for the two current recycled water uses, which was approved by DPH and the Central Valley Water Board. The Discharger requests that reclamation specifications for recycled water use at the Walnut Energy Center Power Plant be removed from the tentative NPDES Permit, and instead, be placed in Water Reclamation Requirements (WRRs) separately issued and adopted by the Central Valley Water Board pursuant to CWC section 13523, if appropriate.

RESPONSE: The latest tentative NPDES Permit was updated to reflect the Discharger's current uses of recycled water at the Pedretti Sports Complex and the submission and approval by DPH of a Title 22 Engineering Report for the Discharger's use of reclaimed water. Accordingly, the requirements to submit a Title 22 Engineering Report have been removed. However, Central Valley Water Board staff does not concur that separate WRRs should be issued and believes that it is appropriate to include reclamation requirements in the proposed NPDES Permit. CWC section 13523 states that the Central Valley Water Board shall, if in the judgment of the Board, it is necessary to protect the public health, safety, or welfare, prescribe WRRs for water which is used as reclaimed water. WRRs may be issued to the recycled water producer, the user or both. The proposed NPDES Permit serves as WDRs pursuant to Article 4, Chapter 4, Division 7 of the CWC (commencing with section 13260), and WRRs may be included in the same order as WDRs. Therefore, Central Valley Water Board staff believes that it is appropriate to retain reclamation requirements in the proposed NPDES Permit.

Discharger Comment No. 2. Compliance Schedule for Electrical Conductivity

The Discharger requests that the compliance schedule for electrical conductivity be extended to 28 July 2022 (all water year types, except critically dry) or 28 July 2026 (for critically dry water years), but that a more robust schedule of interim deadlines be included in the tentative NPDES Permit, to provide the Central Valley Water Board and the public with assurance that the Discharger is undertaking timely and necessary source control steps towards reducing salinity discharges so as to comply with the assigned WLA. If source control efforts are successful, the Discharger will achieve compliance earlier than the compliance schedule deadline, but if additional controls are

necessary, the longer compliance period will provide the Discharger time to implement those additional complex controls. The Discharger proposed interim source control deadlines to be included in the tentative NPDES Permit.

RESPONSE: These changes have been made in the latest tentative NPDES Permit (See response to Part One, Discharger Comment No. 14).

Discharger Comment No. 3. Effluent Limitations for Boron

The tentative NPDES Permit includes final effluent limitations for boron at Discharge Point No. 002 based on the Basin Plan's numeric water quality objectives for the San Joaquin River, mouth of Merced River to Vernalis, and a finding of reasonable potential based solely on the ambient concentration of boron in the San Joaquin River. The Discharger comments that the approved TMDL for Salt and Boron in the Lower San Joaquin River addresses boron levels in the San Joaquin River as well as the Discharger's relative contribution, and that the Discharger was not assigned a WLA due to the Discharger's extremely nominal contribution of boron, and the expectation that activities necessary to reduce electrical conductivity will also result in reduction of boron. The Discharger comments that the effluent limitations for boron are unreasonable pursuant to CWC section 13000, and undermines the credibility of the TMDL process. The Discharger requests that the final effluent limitations for boron at Discharge Point No. 002 be removed from the tentative NPDES Permit.

RESPONSE: Central Valley Water Board does not concur. Regardless of whether there is or is not a waste load allocation in an adopted TMDL, the Central Valley Water Board is still required to impose limitations that ensure that a discharge will not cause or contribute to an exceedance of a water quality objective. The Central Valley Water Board calculates WQBELs in accordance with SIP procedures for non-CTR constituents, and boron is a non-CTR constituent. Although waste load allocations (WLAs) have not been established in the TMDL, that does not preclude the Central Valley Water Board from conducting an RPA or from including effluent limitations for constituents that exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives. The SIP requires that effluent limitations be established when the concentration of a parameter exceeds a water quality objective in the background receiving water and the parameter is detected in the effluent, as is the case for boron in the discharge to the San Joaquin River. Therefore, effluent limitations for boron have not been removed from the proposed NPDES Permit.

Discharger Comment No. 4. Compliance Determination for Annual Average Calculation

The Discharger requests that the following clarification be provided for calculation of annual averages in the Compliance Determination section of the tentative NPDES Permit:

H. Annual Average Calculation. Annual averages for iron, manganese, aluminum, and salinity effluent concentrations shall be performed as the average value of each averaging period as specified in the Monitoring and Reporting Program. For example, effluent monitoring for iron is required quarterly. The annual average for this constituent would be the average of the four quarterly averages. Each quarterly average would be the average of the verified results in that calendar quarter.

RESPONSE: These changes have been made in the latest tentative NPDES Permit (See response to Part One, Discharger Comment No. 15).

Discharger Comment No. 5. Dilution Factor Used for Calculation of Human Health-Based Effluent Limitations at Discharge Point No. 002

Central Valley Water Board staff used a dilution factor of 19 for the calculation of final effluent limitations for Discharge Point No. 2 based on a harmonic mean upstream (at Newman) flow of 398 mgd and the maximum permitted discharge capacity of 20 mgd. According to the SIP, the dilution factor is the available upstream dilution, in this case 19.9. The Discharger requests that a dilution factor of 19.9 be used.

RESPONSE: Central Valley Water Board staff concurs and these changes were included in the latest tentative NPDES Permit.

Discharger Comment No. 6. Calculation of Effluent Limitations for Nitrate at Discharge Point No. 002

The Discharger comments that the performance-based effluent limitation for nitrate at Discharge Point No. 002 did not account for updated monitoring data collected in 2009. In February 2009, the effluent nitrate concentration of 31 mg/L exceeded the performance-based effluent limitation in the tentative NPDES Permit. This maximum value is also higher than the average plus 3.3 times the standard deviation. Based on the June 2008 mixing zone model output submitted to the Central Valley Water Board, a 29.7 meter long, 0.57 meter deep, and 3.66 meter wide mixing zone would be required so that the dilution is sufficient to result in an achievable final performance-based effluent limitation. The tentative NPDES Permit requires that these modeled mixing zones be field verified during the permit term. The Discharger requests that the allowable mixing zone be modified and the final effluent limitation for nitrate be increased to 31 mg/L.

RESPONSE: Central Valley Water Board staff concurs that a revised performance-based effluent limitation for nitrate based on updated monitoring data is appropriate, and the latest tentative NPDES Permit included the revised effluent limitation. See also response to Part One, Discharger Comment No. 6.

Discharger Comment No. 7. Addition of Final Effluent Limitations for Silver at Discharge Point No. 002

Central Valley Water Board staff reassessed reasonable potential to exceed water quality criteria for hardness-based metals and determined that effluent limitations are necessary for silver for the proposed discharge to the San Joaquin River. The Discharger comments that the historic reporting limit for silver (2.0 µg/L) is near to the newly calculated criteria and essentially any analytical error around this reporting limit exceeds the criteria and resulting effluent limitations. Although the laboratory quality assurance data do not indicate any analytical errors causing the detected concentrations, it is possible that detected values are false positives, contamination, or related to “contamination” of treatment additives. There are no known sources of silver in the influent, and the limited silver influent concentration data are similar to the effluent concentration data. Because the final effluent limitation for silver applies in May 2010 (though more time for compliance activities is provided in the separate TSO), the Discharger comments that there is insufficient time to confirm the effluent quality characterization results prior to the final effluent limitation becoming effective. The Discharger requests that the final effluent limitations for silver at Discharge Point No. 002 be removed from the tentative NPDES Permit, and instead, pursuant to section 1.2 of the SIP, the Central Valley Water Board include a special provision requiring the Discharger to conduct additional effluent and receiving water quality characterization prior to the initiation of direct discharge to the San Joaquin River via Discharge Point No. 002. If reasonable potential exists at that time, the Discharger suggests that the Central Valley Water Board reopen the permit to include effluent limitations for silver.

RESPONSE: Central Valley Water Board staff does not concur that effluent limitations for silver for the discharge to the San Joaquin River should be replaced with a provision for additional effluent and receiving water characterization studies. Available data, for which available quality assurance/quality control does not indicate analytical errors, indicates reasonable potential to exceed water quality criteria for silver and, pursuant to the SIP, final effluent limitations are required in the proposed NPDES Permit. The Discharger may conduct the proposed studies and submit the results to the Central Valley Water Board to consider re-opening of the proposed NPDES Permit to revise the effluent limitations for silver.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS

CSPA Comment No. 1. Settleable Solids

CSPA comments that the tentative NPDES Permit contains no effluent limitations for settleable solids which are present in the previous NPDES Permit contrary to the antibacksliding requirements of the CWA and 40 CFR 122.44(l)(1).

RESPONSE: See response to Part One, CSPA Comment No. 3.

CSPA Comment No. 2. Turbidity

CSPA comments that the tentative NPDES Permit moves effluent limitations for turbidity to the Special Provisions section in an attempt to avoid mandatory minimum penalties as required by CWC 13385.

RESPONSE: See response to Part One, CSPA Comment No. 4.

CSPA Comment No. 3. Annual Average Effluent Limitations

CSPA comments that effluent limitations for aluminum, iron and manganese are improperly regulated as an annual average contrary to 40 CFR 122.45(d)(2) and common sense.

RESPONSE: See response to Part One, CSPA Comment No. 5.

CSPA Comment No. 4. Mass-Based Effluent Limitations

CSPA comments that the tentative NPDES permit fails to contain mass-based effluent limitations for copper, carbon tetrachloride, chloride, chlorodibromomethane, dichlorobromomethane, nitrate, aluminum, boron, iron, lead, manganese, selenium and silver as required by 40 CFR 122.45(b).

RESPONSE: See response to Part One, CSPA Comment No. 6.

CSPA Comment No. 5. Oil and Grease

CSPA comments that the tentative NPDES Permit does not contain an effluent limitation for oil and grease in violation of 40 CFR 122.44 and CWC section 13377.

RESPONSE: See response to Part One, CSPA Comment No. 7.

CSPA Comment No. 6. Chronic Toxicity

CSPA comments that the tentative NPDES Permit does not contain enforceable effluent limitations for chronic toxicity and therefore does not comply with 40 CFR 122.44(d)(1)(i) and the SIP.

RESPONSE: See response to Part One, CSPA Comment No. 9.

CSPA Comment No. 7. Hardness-Based Metals

CSPA comments that the tentative NPDES Permit establishes effluent limitations for metals based on the hardness of the effluent as opposed to the ambient upstream receiving water hardness as required by the CTR at 40 CFR 131.38(c)(4).

RESPONSE: See response to Part One, CSPA Comment No. 10.

CSPA Comment No. 8. Bis (2-ethylhexyl) Phthalate

CSPA comments that the tentative NPDES Permit fails to contain an effluent limitation for bis (2-ethylhexyl) phthalate despite a clear reasonable potential to exceed waste quality standards in violation of 40 CFR 122.44.

RESPONSE: See response to Part One, CSPA Comment No. 11.

CSPA Comment No. 9. Temperature

CSPA comments that the tentative NPDES Permit fails to require a site-specific study for temperature as was required by State Water Board WQO 2002-0016.

RESPONSE: See response to Part One, CSPA Comment No. 12.

CSPA Comment No. 10. Statistical Multipliers

CSPA comments that the tentative NPDES Permit contains an inadequate RPA by using incorrect statistical multipliers as required by 40 CFR 122.44(d)(1)(ii) and fails to contain adequate effluent limitations for arsenic, methylene blue active substances, and zinc as required by 40 CFR 122.44.

RESPONSE: See response to Part One, CSPA Comment No. 13.

CSPA Comment No. 11. Copper Translator

CSPA comments that the effluent limitation for copper has been revised to be less stringent based on the incorrect hardness and an undefined "metal translator".

RESPONSE: See response to Part Two, CSPA Comment No. 1.

CSPA Comment No. 12. Metal Translators

CSPA comments that the RPA for copper, lead and zinc and the effluent limitation for copper are based on a metals translator study that has not been sufficiently defined in accordance with 40 CFR 124.8.

RESPONSE: See response to Part Two, CSPA Comment No. 1.

CSPA Comment No. 13. Effluent Limitations for Zinc

CSPA comments that the tentative NPDES Permit fails to include an effluent for zinc as required by 40 CFR 122.44 and the tentative NPDES Permit should not be adopted in accordance with CWC section 13377.

RESPONSE: See response to Part Two, CSPA Comment No. 3.

CSPA Comment No. 14. Effluent Limitations for Lead

CSPA comments that the tentative NPDES Permit fails to contain effluent limitations for lead in violation of the CTR at 40 CFR 122.44, CWC section 13377, and the SIP.

RESPONSE: See response to Part Two, CSPA Comment No. 4.

CSPA Comment No. 15. Mixing Zone

CSPA comments that the tentative NPDES Permit grants a mixing zone for effluent limitations for human health-based criteria that does not comply with the requirements of the SIP or the Basin Plan.

RESPONSE: See response to Part One, Discharger Comment No. 2.

CSPA Comment No. 16. Effluent Limitations for Chloride

CSPA comments that the tentative NPDES Permit fails to contain an effluent limitation for chloride despite clear reasonable potential to exceed a water quality standard and defends discarding data from the RPA based on statistical definitions contrary to 40 CFR 122.44(d) and section 1.2 of the SIP.

RESPONSE: See response to Part Two, CSPA Comment No. 6.

CSPA Comment No. 17. Antidegradation Analysis

CSPA comments that the tentative NPDES Permit contains an inadequate antidegradation analysis that does not comply with the requirements of CWA section 101(a), 40 CFR 131.12, the State Water Board's Antidegradation Policy (Resolution 68-16), and CWC sections 13146 and 13247. CSPA comments that the antidegradation analysis in the Fact Sheet (Attachment F) does not contain sufficient information regarding the factual, legal and policy questions considered in preparing the permit as required by 40 CFR 124.8 (a) and (a)(4).

RESPONSE: See response to Part One, CSPA Comment No. 1.

PART FOUR: 19 OCTOBER 2009 TENTATIVE NPDES PERMIT

CITY OF TURLOCK (DISCHARGER) COMMENTS

Discharger Comment No. 1. Dissolved Copper Monitoring

The Discharger requests that Central Valley Water Board staff remove effluent monitoring requirements for dissolved copper as results from sampling do not correspond to effluent or receiving water limitations, and would not be used for compliance purposes. The Discharger comments that this requirement would necessitate implementation of additional field procedures to meet the 15 minute hold time to filtration.

RESPONSE: Central Valley Water Board staff concurs that the effluent monitoring requirement for dissolved copper is not necessary to determine compliance with effluent limitations. Therefore, this requirement has been removed in the proposed NPDES Permit (agenda version).

Discharger Comment No. 2. Interim Effluent Limitation for Aluminum

The Discharger requests that the Central Valley Water Board include the compliance schedule and interim effluent limitations for aluminum in the permit rather than the TSO. The Discharger comments that the final effluent limitations for aluminum are derived from a new interpretation of the Basin Plan's narrative toxicity water quality objective, applying USEPA developed National Recommended Ambient Water Quality Criteria. The Fact Sheet (Attachment F) states that this is a "new regulatory requirement." Therefore, the Discharger believes a compliance schedule and interim effluent limitations should be included in the permit pursuant to the State Water Board's recently adopted compliance schedule policy, State Water Board Resolution 2008-0025.

RESPONSE: See response to Part One, Discharger Comment No. 4.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS

CSPA Comment No. 1. Compliance Schedule for Electrical Conductivity

CSPA comments that the tentative NPDES Permit contains a compliance schedule for electrical conductivity that violates the Basin Plan, federal regulations, and the CWA.

RESPONSE: Central Valley Water Board staff does not concur. Under CWA section 301(b)(1)(C), NPDES permits must include effluent limitations as stringent as necessary to achieve water quality standards not later than 1 July 1977. However, for new or revised water quality standards adopted after 1 July 1977, the states can include compliance schedules in NPDES permits to achieve effluent limitations

implementing the new or revised standards when the applicable water quality standards or the states' implementing regulations authorize compliance schedules. The Basin Plan's implementing regulations authorize compliance schedules. The Basin Plan, Implementation, page IV.32.03, states that: "*[e]xisting NPDES point source dischargers are low priority and subject to the compliance schedules for low priority discharges in Table IV-4.3.*" The compliance schedule provided in Table IV-4.3 allows 16 years from the effective date of the TMDL (i.e., 28 July 2006) for wet through dry water years and 20 years from the effective date of the TMDL for critical years to achieve compliance with the water quality objective for electrical conductivity. State Water Board Resolution No. 2008-0025, Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits, states that "*[a] Water Board may establish a compliance schedule that exceeds ten years in a permit that... has 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 compliance schedule for electrical conductivity in the proposed NPDES Permit is consistent with the Basin Plan and State Water Board Resolution No. 2008-0025. Therefore, no changes have been made to the compliance schedule for electrical conductivity in the proposed NPDES Permit.