



California Sportfishing Protection Alliance

"An Advocate for Fisheries, Habitat and Water Quality"

3536 Rainier Avenue, Stockton, CA 95204

T: 209-464-5067, F: 209-464-1028, E: deltakeep@aol.com, W: www.calsport.org

15 April 2010

Mr. Ken Landau, Assistant Executive Officer
Ms. Diana Messina, Supervising WRCE
Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6144

VIA: Electronic Submission
Hardcopy if Requested

RE: Waste Discharge Requirements (NPDES No. CA0079316) for Placer County Department of Facility Services, Placer County Sewer Maintenance District 1, Waste Water Treatment Plant, Placer County

Dear Mr. Landau and Ms. Messina:

The California Sportfishing Protection Alliance (CSPA) has reviewed the proposed Waste Discharge Requirements in the above referenced matter and respectfully submits the following comments.

CSPA requests status as a designated party for this proceeding. CSPA is a 501(c)(3) public benefit conservation and research organization established in 1983 for the purpose of conserving, restoring, and enhancing the state's water quality and fishery resources and their aquatic ecosystems and associated riparian habitats. CSPA has actively promoted the protection of water quality and fisheries throughout California before state and federal agencies, the State Legislature and Congress and regularly participates in administrative and judicial proceedings on behalf of its members to protect, enhance, and restore California's degraded water quality and fisheries. CSPA members reside, boat, fish and recreate in and along waterways throughout the Central Valley, including Placer County.

1. The compliance schedules in the proposed Permit and the Cease and Desist Order do not meet the Basin Plan requirement that compliance be achieved in "the shortest practicable time".

The proposed Permit, page F-9 contains the following with regard to *Planned Changes*: "Prior to the adoption of Order No. R5-2005-0074, the Discharger began to pursue regionalization with the City of Lincoln Wastewater Treatment and Reclamation Facility. As stated in Finding No. 11 of Order No. R5-2005-0074, the Discharger committed to making a determination by 2 January 2008 regarding whether to regionalize or complete and implement measures to comply with effluent limitations. If, after 2 January 2008, wastewater regionalization was not the selected compliance alternative, the Discharger agreed that sufficient time remained to complete and implement measures to come into compliance with the Order by March 2010. The

Discharger has not yet connected to the City of Lincoln Wastewater Treatment and Reclamation Facility or completed measures to come into compliance with permit requirements.”

Finding No. 11 of the existing NPDES permit, Order No. R5-2005-0074 states that: “After 2 January 2008, if wastewater regionalization is not the selected compliance alternative, the Discharger has agreed that there would be sufficient time remaining under the currently included compliance period to complete and implement measures to achieve full compliance with this Order.” The existing NPDES permit also includes a compliance schedule for I/I correction measures (pages 61 and 62) to be implemented by 30 December 2009 and compliance schedules (page 63) for Bis(2-ethylhexyl)phthalate, Bromodichloromethane, Copper, Dioxins and Furans, Lead, PCBs, Silver, and Zinc which became effective on 1 March 2010.

Placer County’s SMD-1 wastewater treatment plant remains in noncompliance despite their promise to complete and implement compliance measures by March 2010. The Regional Board’s response to this continued noncompliance is simply to grant an additional five years for this recalcitrant Discharger. As stated in the Permit; the County promised that if regionalization was not feasible by 2 January 2008 they could implement a compliance project by March 2010, a period of 2 years and 3 months. If the County had the capability, as promised, to complete and implement a project within a little over two years, how is granting them a 5-year compliance period “the shortest practicable time”? (Basin Plan, page IV-17.00) The Regional Board uses a five-year compliance period as a default in virtually every permit it issues. There is rarely any analysis of the actual time to achieve compliance. In this case there has been no penalty associated with failing to do anything to achieve compliance during the 5-year life of the existing permit; instead the proposed excessively long compliance period appears to be a gift. Any granted compliance schedule should be based on Placer County’s original promise to complete and implement a project within a little over two years.

2. The proposed Permit establish Effluent Limitations for metals based on the hardness of the effluent and/or the downstream water and are therefore less stringent or altogether absent as compared to use of the ambient upstream receiving water hardness as required by Federal Regulations, the California Toxics Rule (CTR, 40 CFR 131.38(c)(4)).

The lowest measured upstream ambient hardness was 20 mg/l. (Page F-24)

“Therefore, in this Order the ECA for all concave down metals has been calculated using Equation 1 with a hardness of 141 mg/l (as CaCO₃)” (Page F-26, emphasis added) Concave down metals are chronic cadmium, chromium III, copper, nickel and zinc. ECA is the effluent concentration allowance.

For concave up metals, the proposed Permit states that: “Thus, the ECA was calculated (Equation 3) based on a minimum observed upstream receiving water hardness...and the minimum effluent hardness.” (Page F-28, emphasis added) Concave up metals are acute cadmium, lead and acute silver. Again, the minimum effluent hardness was 141 mg/l.

Constituent (total recoverable)	Max effluent concentration	ECA using 20 mg/l hardness (4 day/ 1 hour)	Permit developed ECA	Reasonable potential from permit	Reasonable potential using 20 mg/l hardness
Cadmium	0.036	0.8/0.91	3.2/0.70	No	No
Chromium III	0.16	58	50	No	No
Copper	21.9	2.5/3.1	13/2.4	Yes	Yes
Lead	25.2	.39/10	3.6/0.41	Yes	Yes
Nickel	2.7	13/130	70/13	No	Yes
Silver	0.02	.23	2.9/0.25	No	No
Zinc	48	31	160/31	No	Yes

Use of the upstream ambient hardness of 20 mg/l would have resulted in additional Effluent Limitations for nickel and zinc and significantly more stringent Effluent Limitations for copper and lead. The proposed Permit is not protective of the beneficial uses of the receiving stream.

The term “Ambient”

The Regional Board rationalizes using the effluent hardness as the CTR does not define “ambient”. The Regional Board then takes the liberty to make their own unique definition of the term to fit their goal. Federal Regulation 40 CFR 131.38(c)(4) states that: “For purposes of calculating freshwater aquatic life criteria for metals from the equations in paragraph (b)(2) of this section, for waters with a hardness of 400 mg/l or less as calcium carbonate, the actual ambient hardness of the surface water shall be used in those equations.” (Emphasis added). There is no way imaginable that the wastewater effluent hardness can be termed the hardness of the surface water. The Regional Board completely ignores the Federal regulatory requirement to use “the actual ambient hardness of the surface water” in utilizing the effluent hardness to determine reasonable potential and to develop effluent limitations.

The definition of *ambient* is “in the surrounding area”, “encompassing on all sides”. It is reasonable to assume, after considering the definition of ambient, that EPA is referring to the hardness of the receiving stream before it is potentially impacted by an effluent discharge. It is also reasonable to make this assumption based on past interpretations and since EPA, in permit writers’ guidance and other reference documents, generally assumes receiving streams have dilution, which would ultimately “encompass” the discharge. Ambient conditions are in-stream conditions unimpacted by the discharge. Confirming this definition, the SIP Sections 1.4.3.1 *Ambient Background Concentration as an Observed Maximum* and 1.4.3.2 state in part that: “If possible, preference should be given to ambient water column concentrations measured immediately upstream or near the discharge, but not within an allowed mixing zone for the discharge. The RWQCB shall have discretion to consider if any samples are invalid for use as applicable data due to evidence that the sample has been erroneously reported or the sample is not representative of the ambient receiving water column that will mix with the discharge.”

The Regional Board has used the effluent hardness and the instream effluent hardness measured immediately downstream of the point of discharge, calling such “ambient”. Ambient is defined as “surrounding”; not “in the middle of”. Regional Board staff has begun to define any hardness

used (effluent, upstream and downstream) as being “ambient”. The result of using a higher effluent or downstream hardness value is that metals are toxic at higher concentrations, discharges have less reasonable potential to exceed water quality standards and the resulting Permits have fewer Effluent Limitations.

This is a discussion of wastewater discharges. Ambient is defined as that water surrounding the wastewater discharge. The wastewater discharge is called the “effluent”. The effluent cannot surround itself; the effluent cannot be ambient unto itself. Upstream water, the streambed and the air surround the effluent. This discussion is limited to the water column, therefore the wastewater discharge, the effluent, is surrounded by the upstream water. As the effluent flows downstream it mixes with the upstream water. This mixture of effluent and upstream water has been impacted and changed in character by the wastewater discharge; it is not “ambient”.

The most typical wastewater discharge situation is where the receiving water hardness is lower than the effluent hardness. Metals are more toxic in lower hardness water. For example; if the receiving water hardness is 25 mg/l and the effluent hardness is 50 mg/l a corresponding chronic discharge limitation for copper based on the different hardness's would be 2.9 ug/l and 5.2 ug/l, respectively. Obviously, the limitation based on the true ambient (upstream) receiving water hardness is more restrictive.

The Federal Register, Volume 65, No. 97/Thursday, May 18th 2000 (31692), adopting the California Toxics Rule in confirming that the ambient hardness is the upstream hardness, absent the wastewater discharge, states that: “A hardness equation is most accurate when the relationship between hardness and the other important inorganic constituents, notably alkalinity and pH, are nearly identical in all of the dilution waters used in the toxicity tests and in the surface waters to which the equation is to be applied. If an effluent raises hardness but not alkalinity and/or pH, using the lower hardness of the downstream hardness might provide a lower level of protection than intended by the 1985 guidelines. If it appears that an effluent causes hardness to be inconsistent with alkalinity and/or pH the intended level of protection will usually be maintained or exceeded if either (1) data are available to demonstrate that alkalinity and/or pH do not affect the toxicity of the metal, or (2) the hardness used in the hardness equation is the hardness of upstream water that does not include the effluent. The level of protection intended by the 1985 guidelines can also be provided by using the WER procedure.”

On March 24, 2000 the US Fish and Wildlife Service (Service) and the National Marine Fisheries Service (NMFS) issued a biological opinion on the effects of the final promulgation of the CTR on listed species and critical habitats in California in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 USC 1531 et seq.; Act). The biological opinion was issued to the U.S. Environmental Protection Agency, Region 9, with regard to the “Final Rule for the Promulgation of Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California” (CTR)”. The document represented the Services’ final biological opinion on the effects of the final promulgation of the CTR on listed species and critical habitats in California in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 USC 1531 et seq.; Act).

The biological opinion contains the following discussion, beginning on page 205, regarding the use of hardness in developing limitations for toxic metals:

“The CTR should more clearly identify what is actually to be measured in a site water to determine a site-specific hardness value. Is the measure of hardness referred to in the CTR equations a measure of the water hardness due to calcium and magnesium ions only? If hardness computations were specified to be derived from data obtained in site water calcium and magnesium determinations alone, confusion could be avoided and more accurate results obtained (APHA 1985). Site hardness values would thus not include contributions from other multivalent cations (e.g., iron, aluminum, manganese), would not rise above calcium + magnesium hardness values, or result in greater-than-intended site criteria when used in formulas. In this Biological opinion, what the Services refer to as hardness is the water hardness due to calcium + magnesium ions only.

The CTR should clearly state that to obtain a site hardness value, samples should be collected upstream of the effluent source(s). Clearly stating this requirement in the CTR would avoid the computation of greater-than-intended site criteria in cases where samples were collected downstream of effluents that raise ambient hardness, but not other important water qualities that affect metal toxicity (e.g., pH, alkalinity, dissolved organic carbon, calcium, sodium, chloride, etc.). Clearly, it is inappropriate to use downstream site water quality variables for input into criteria formulas because they may be greatly altered by the effluent under regulation. Alterations in receiving water chemistry by a discharger (e.g., abrupt elevation of hardness, changes in pH, exhaustion of alkalinity, abrupt increases in organic matter etc.) should not result through application of hardness in criteria formulas, in increased allowable discharges of toxic metals. If the use of downstream site water quality variables were allowed, discharges that alter the existing, naturally-occurring water composition would be encouraged rather than discouraged. Discharges should not change water chemistry even if the alterations do not result in toxicity, because the aquatic communities present in a water body may prefer the unaltered environment over the discharge-affected environment. Biological criteria may be necessary to detect adverse ecological effects downstream of discharges, whether or not toxicity is expressed.

The CTR proposes criteria formulas that use site water hardness as the only input variable. In contrast, over twenty years ago Howarth and Sprague (1978) cautioned against a broad use of water hardness as a “shorthand” for water qualities that affect copper toxicity. In that study, they observed a clear effect of pH in addition to hardness. Since that time, several studies of the toxicity of metals in test waters of various compositions have been performed and the results do not confer a singular role to hardness in ameliorating metals toxicity. In recognition of this fact, most current studies carefully vary test water characteristics like pH, calcium, alkalinity, dissolved organic carbon, chloride, sodium, suspended solid s, and others while observing the responses of test organisms. It is likely that understanding metal toxicity in waters of various chemical makeups is not possible without the use of a geochemical model that is more elaborate than a regression formula. It may also be that simple toxicity tests (using mortality, growth, or reproductive endpoints) are not capable of discriminating the role of hardness or other water chemistry characteristics in modulating metals toxicity (Erickson *et al.* 1996). Gill surface interaction models have provided a useful framework for the study of acute metals toxicity in fish (Pagenkopf 1983; Playle *et al.* 1992; Playle *et al.* 1993a; Playle *et al.* 1993b; Janes and

Playle 1995; Playle 1998), as have studies that observe physiological (e.g. ion fluxes) or biochemical (e.g. enzyme inhibition) responses (Lauren and McDonald 1986; Lauren and McDonald 1987a; Lauren and McDonald 1987b; Reid and McDonald 1988; Verbost *et al.* 1989; Bury *et al.* 1999a; Bury *et al.* 1999b). Even the earliest gill models accounted for the effects of pH on metal speciation and the effects of alkalinity on inorganic complexation, in addition to the competitive effects due to hardness ions (Pagenkopf 1983). Current gill models make use of sophisticated, computer-based, geochemical programs to more accurately account for modulating effects in waters of different chemical makeup (Playle 1998). These programs have aided in the interpretation of physiological or biochemical responses in fish and in investigations that combine their measurement with gill metal burdens and traditional toxicity endpoints.

The Services recognize and acknowledge that hardness of water and the hardness acclimation status of a fish will modify toxicity and toxic response. However the use of hardness alone as a universal surrogate for all water quality parameters that may modify toxicity, while perhaps convenient, will clearly leave gaps in protection when hardness does not correlate with other water quality parameters such as DOC, pH, Cl- or alkalinity and will not provide the combination of comprehensive protection and site specificity that a multivariate water quality model could provide. In our review of the best available scientific literature the Services have found no conclusive evidence that water hardness, by itself, in either laboratory or natural water, is a consistent, accurate predictor of the aquatic toxicity of all metals in all conditions.

Over or under protective?

The Regional Board's use of hardnesses other than the upstream is based on an approach developed by Dr. Robert Emerick, of Eco:Logic Engineers. Dr. Emerick developed a different approach for evaluating hardness-dependent metals that used effluent and downstream hardness values in assessing reasonable potential and developing effluent limits. He subsequently presented his approach at the Water Board's Training Academy and the Regional Board has adopted this methodology as a defacto policy in developing and issuing wastewater discharge permits. Dr. Emerick's approach has never been evaluated or adopted through the legally mandated rule-making procedures. Use of the policy has resulted in fewer and less stringent and less protective limits in numerous permits.

Use of the "Emerick" method considers only hardness. However there are numerous other components of a wastewater discharge that will affect the toxicity of the "hardness dependant metals" which are not evaluated in the method or elsewhere in the permit. For example, pH, alkalinity, dissolved organic carbon, calcium, sodium, and chloride levels which affect the toxicity of the cited metals can be substantially altered by the wastewater discharge. Not evaluating these other parameters and their impact on the toxicity of metals, the Central Valley Regional Board cannot state that the limitations using the lowest recorded upstream hardness are overly protective.

In rationalizing their use of the effluent hardness, the Regional Board states that use of the lower upstream ambient hardness would be overly protective.

On 12 March 2009, EPA issued training materials on its Biotic Ligand Model (BLM) using hardness dependant copper. The BLM is a computer model that utilized 10 water chemistry parameter inputs to calculate a water quality criterion. The BLM shows that water quality can affect metal toxicity, in particular natural organic matter, and pH have a strong affect on copper, but hardness cations, alkalinity and sodium also play a role. Failure to consider these effects may make a water quality objective overprotective or underprotective for a large number of sites where permits for metal discharges are needed.

(<http://epa.gov/waterscience/standards/academy/special/blm/files/presentation.pdf>)

For example, the available literature indicates that lower pH values can increase the toxicity of metals. The discharge pH at SMD-1 has been shown to be as low as 6.0 (page F-7). This information was not considered by the Regional Board. Use of the lower "ambient" upstream hardness will result in lower effluent limitations for the regulated toxic metal constituents and yet may not, according to EPA's discussions with regard to the BLM, be adequately protective of the beneficial uses of the receiving stream.

The biotic ligand model is a metal bioavailability model based on recent information about the chemical behavior and physiological effects of metals in aquatic environments. Earlier freshwater aquatic life criteria for copper published by the Agency were based on empirical relationships of toxicity to water hardness. That is, a relationship was established linking the criteria concentrations with water hardness. These hardness-dependent criteria, however, represented combined effects of different water quality variables (such as pH and alkalinity) correlated with hardness. Unlike the empirically derived hardness-dependent criteria, the BLM explicitly accounts for individual water quality variables and addresses variables that EPA had not previously factored into the hardness relationship. Where the previous freshwater aquatic life criteria were hardness-dependent, these revised criteria are dependent on a number of water quality parameters (e.g., calcium, magnesium, dissolved organic carbon) described in the document. BLM-based criteria can be more stringent than the current hardness-based copper criteria and in certain cases the current hardness-based copper criteria may be overly stringent for particular water bodies. "Stringency" likely varies depending on the specific water chemistry of the site. The 1986 hardness-based equation and resulting copper criteria reflected the effects of water chemistry factors such as hardness (and any of the other factors that were correlated with hardness, chiefly, pH and alkalinity). However, the hardness-based criteria, unadjusted with the WER, did not explicitly consider the effects of DOC and pH, two of the more important parameters affecting copper toxicity. This application resulted in copper criteria that were potentially under-protective (i.e., not stringent enough) at low pH and potentially over-protective (i.e., too stringent) at higher DOC levels.

The Regional Board also ignores the fact that US EPA has updated their Ambient Criteria for the Protection of Freshwater Aquatic Life for Copper utilizing the BLM. Use of the latest science presented in EPA's criteria would eliminate the hardness discussion.

Evaluation of hardness alone is insufficient for the Central Valley Regional Board to conclude that the use of the upstream ambient hardness is overly protective and may actually instead be under protective based on the expert advice from EPA, US Fish and Wildlife Service (Service)

and the National Marine Fisheries Service (NMFS). The Regional Board has no basis to state that an Effluent Limitation based on the upstream ambient hardness is overly protective.

The Davis Decision

The Regional Board cited the State Board's Water Quality Order (WQO)(No. 2008 0008) for the City of Davis as allowing complete discretion in utilizing the downstream hardness in deriving limits for toxic metals. SWRCB presidential Order No. WQ 2008-0008 (Corrected) regarding a petition for consideration of the City of Davis' NPDES Permit states and concludes that:

“Based on the current record, it would be more appropriate to use the lowest reliable upstream receiving water hardness values of 78 mg/l for Willows Slough Bypass and 85 mg/l for Conaway Ranch Toe Drain for protection from acute toxicity impacts, regardless of when the samples were taken or whether they were influenced by storm events. Because high flow conditions may deviate from the design flow conditions for selection of hardness as specified in the CTR, it may not be necessary, in some circumstances, to select the lowest hardness values from high flow or storm event conditions. Regardless of the hardness used, the resulting limits must always be protective of water quality criteria under all flow conditions.”

“Conclusion: The Central Valley Water Board was justified in using upstream receiving water hardness values rather than effluent hardness values. However, for protection from acute toxicity impacts in the receiving waters, which can occur in short durations even during storm events, in this case, based on the existing record, the Central Valley Water Board should have used the lowest valid upstream receiving water hardness values of 78 mg/l for Willow Slough Bypass and 85 mg/l for Conaway Ranch Toe Drain. Effluent limitations must protect beneficial uses considering reasonable, worst-case conditions. We recognize that this approach does not necessarily agree with conclusions in other guidance stating that low flow conditions are the “worst-case” conditions. However, nothing in this Order is intended to suggest that low flows are inappropriate for determining the reasonable, worst-case conditions in other contexts.”
(Emphasis added)

WQO 2008 0008 in requiring the Regional Board to modify their permit states: “Revise the Fact Sheet to include a discussion of the appropriate hardness to use to protect from acute toxicity impacts (which can occur in short-term periods including storm events) in the receiving waters. The Fact Sheet should also state that the lowest valid upstream receiving water hardness values of 78 mg/l for Willow Slough Bypass and 85 mg/l for Conaway Ranch Toe Drain should be used to determine reasonable potential for the effluent to exceed the hardness-dependent metal CTR criteria, unless additional evidence and analysis, consistent with this Order, demonstrates that different hardness values are appropriate to use and are fully protective of water quality.” The Regional Board did not use the lowest observed upstream hardness as required in WQO 2008 0008. The Regional Board has not provided additional evidence and analysis demonstrating that different hardness is fully protective of beneficial uses. To the contrary, the Regional Board does not address the March 24, 2000 the US Fish and Wildlife Service (Service) and the National Marine Fisheries Service (NMFS) CTR Biological Opinion cited above stating that the use of hardness alone is not protective of beneficial uses and recommending the sole use of the ambient upstream hardness in developing limits for toxic metals.

The SWRCB Order requires that the lowest observed hardness be used to develop limitations for hardness dependant metals regardless of where it is found. This approach is the most protective of water quality when only hardness is used to determine the potential of toxicity of metals. While the SWRCB Order is protective of water quality; the Order fails to discuss the regulatory requirement of the CTR that "...the actual ambient hardness of the surface water shall be used..." This could have been easily corrected as addressed by citing federal regulation 40 CFR 122.44(d) in utilizing the lower effluent hardness in being more stringent than the applicable regulation. The Davis case is different than the situation at SMD-1: at Davis the lower hardness was actually observed downstream while at SMD-1 the upstream hardness is clearly lower at 20 mg/l than the effluent or downstream waters.

Mixing zones

The Regional Board's arguments with regard to effluent and/or downstream receiving water hardness can only be made if in-stream mixing is considered. Mixing zones may be granted in accordance with extensive requirements contained in the SIP and the Basin Plan to establish Effluent Limitations. Mixing zones cannot be considered in conducting a reasonable potential analysis to determine whether a constituent will exceed a water quality standard or objective. The Regional Board's approach in using the effluent or downstream hardness to conduct a reasonable potential analysis and consequently establish effluent limitations can only be utilized if mixing is considered; otherwise the ambient (upstream) hardness results in significantly more restrictive limitations. A mixing zone allowance has not been discussed with regard to this issue and therefore does not comply with the SIP.

Conclusion

The issue is that the Regional Board fails to comply with the regulatory requirement to use the ambient instream hardness for limiting hardness dependant metals under the CTR. Failure to utilize the upstream ambient hardness for determining reasonable potential and developing limitations results in fewer and less restrictive Effluent Limitations. Use of the upstream ambient hardness of 20 mg/l instead of the significantly higher effluent hardness would have resulted in additional Effluent Limitations for nickel and zinc and significantly more stringent Effluent Limitations for copper and lead. The proposed Permit is not protective of the beneficial uses of the receiving stream.

3. Effluent Limitations for arsenic and electrical conductivity (EC) are improperly regulated as an annual average contrary to Federal Regulations 40 CFR 122.45 (d)(2) and common sense.

Federal Regulation 40 CFR 122.45 (d)(2) requires that permit for POTWs establish Effluent Limitations as average weekly and average monthly unless impracticable. The proposed Permit establishes Effluent Limitations for EC, iron and manganese as an annual average contrary to the cited Federal Regulation. Establishing the Effluent Limitations for arsenic and EC in accordance with the Federal Regulation is not impracticable; to the contrary the Central Valley Regional Board has a long history of having done so. Proof of impracticability is properly a steep slope

and the Regional Board has not presented any evidence that properly and legally limiting arsenic and EC is impracticable.

The proposed Permit, page F-61 states that: "For effluent limitations based on Primary and Secondary MCLs, except nitrate plus nitrite and nitrite, this Order includes annual average effluent limitations. The Primary and Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis (except for nitrate and nitrite), when sampling at least quarterly. Since it is necessary to determine compliance on an annual average basis, it is impracticable to calculate average weekly and average monthly effluent limitations."

The Regional Board's citation of Title 22 is incorrect since Title 22 addresses drinking water distribution systems not surface waters. The Basin Plan states that surface waters shall not exceed MCLs and does not prescribe any compliance time period. The Basin Plan states that, to protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs. The narrative tastes and odors objective states: "*Water shall not contain taste- or odor producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.*" Again the Basin Plan does not prescribe time periods but instead states that limits may be more stringent than the MCLs.

Arsenic and many of its compounds are especially potent poisons. Low-level exposure to arsenic at concentrations found commonly in US drinking water compromises the initial immune response to H1N1 or swine flu infection according to NIEHS-supported scientists. The study, conducted in laboratory mice, suggests that people exposed to arsenic in their drinking water may be at increased risk for more serious illness or death in response to infection from the virus. (Courtney, D; Ely, Kenneth H.; Enelow, Richard I.; Hamilton, Joshua W. (2009). "Low Dose Arsenic Compromises the Immune Response to Influenza A Infection in vivo". *Environmental Health Perspectives*.) Immediate symptoms on an acute poisoning typically include vomiting, esophageal and abdominal pain, and bloody "rice water" diarrhea. (<http://www.who.int/mediacentre/factsheets/fs210/en/>) Electrical conductivity (EC) is a measure of the salts in water. The EC levels are generally regulated for taste and odor impacts. Taste impacts occur instantaneously not over a year's period of time. High EC levels also impact the salt buildup in pipes and plumbing fixtures. High salt levels can discolor plumbing fixtures quickly. EC also contributes to scaling and sedimentation, *which* are other processes that have economic impacts. Scale is a mineral deposit that builds up on the insides of hot water pipes, boilers, and heat exchangers, restricting or even blocking water flow. Sediments are loose deposits in the distribution system or home plumbing.

4. The proposed Permit removes Effluent Limitations for numerous constituents and is less stringent than the existing permit contrary to the Antidegradation requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (l)(1).

The proposed Permit removes Effluent Limitations for alachlor, atrazine, bis (2-ethylhexyl) phthalate, chloroform, manganese, methyl tertiary butyl ether, oil and grease, persistent

chlorinated hydrocarbon pesticides, phthalate acid esters, polychlorinated biphenyls, settleable solids, silver, TCDD-equivalents, tributyltin, turbidity and zinc.

As is shown above, zinc was removed due to the use of the effluent hardness, rather than the legally required instream ambient hardness in determining reasonable potential. Turbidity was removed despite the fact that the effluent limitation was exceeded (page F-5) at a level up to 10.4 NTU, which likely also caused exceedance of the turbidity Receiving Water Limitation based on the Basin Plan objective. Proposed Permit, page F-9 states, in part, that: “4. An inspection of the Facility was conducted on 27 May 2008. The following is a summary of the major findings from the inspection report: a. Composite effluent samples were stored too cold, in violation of the Standard Provisions. c. Daily grab samples were always collected in the morning, contrary to the intent of the Monitoring and Reporting Program. It was recommended that the Discharger vary the sample time by more than several minutes.” According to the inspection Findings the sampling data is not sufficiently reliable to eliminate the reasonable potential developed in the previous permit. The facility is located in the northern half of the City of Auburn and contains most of the community’s industrial dischargers; the sampling conducted in the early morning hours potentially missed all the industrial flows. The proposed Permit states in several places that: “The Discharger implemented “clean” sampling procedures January 2007” but provides no laboratory QA/QC results to eliminate any prior sampling results. The proposed Permit states on page F-50 that: “The discharge of blended secondary effluent, compared to a full tertiary discharge, will result in the discharge of additional pollutants. The RPA was based on tertiary treatment, and the blended discharge may not comply with the effluent limitations established in this Order.” The discharge was not sampled during worst case discharge periods therefore the data used to eliminate previously established Effluent Limitations is simply insufficient.

Most of the above individual citations are sufficient alone to warrant maintenance of the existing Effluent Limitations. In combination it is clear that the proposed Permit, absent the previously established Effluent Limitations, is not sufficient to protect the beneficial uses of the receiving stream. As follows, the proposed Permit does not meet the regulatory requirements for allowing the removal of Effluent Limitations.

Under the Clean Water Act (CWA), point source dischargers are required to obtain federal discharge (NPDES) permits and to comply with water quality based effluent limits (WQBELs) in NPDES permits sufficient to make progress toward the achievement of water quality standards or goals. The antibacksliding and antidegradation rules clearly spell out the interest of Congress in achieving the CWA’s goal of continued progress toward eliminating all pollutant discharges. Congress clearly chose an overriding environmental interest in clean water through discharge reduction, imposition of technological controls, and adoption of a rule against relaxation of limitations once they are established.

Upon permit reissuance, modification, or renewal, a discharger may seek a relaxation of permit limitations. However, according to the CWA, relaxation of a WQBEL is permissible only if the requirements of the antibacksliding rule are met. The antibacksliding regulations prohibit EPA from reissuing NPDES permits containing interim effluent limitations, standards or conditions less stringent than the final limits contained in the previous permit, with limited exceptions. These regulations also prohibit, with some exceptions, the reissuance of permits originally based

on best professional judgment (BPJ) to incorporate the effluent guidelines promulgated under CWA §304(b), which would result in limits less stringent than those in the previous BPJ-based permit. Congress statutorily ratified the general prohibition against backsliding by enacting §§402(o) and 303(d)(4) under the 1987 Amendments to the CWA. The amendments preserve present pollution control levels achieved by dischargers by prohibiting the adoption of less stringent effluent limitations than those already contained in their discharge permits, except in certain narrowly defined circumstances.

When attempting to backslide from WQBELs under either the antidegradation rule or an exception to the antibacksliding rule, relaxed permit limits must not result in a violation of applicable water quality standards. The general prohibition against backsliding found in §402(o)(1) of the Act contains several exceptions. Specifically, under §402(o)(2), a permit may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant *if*: (A) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation; (B)(i) information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (ii) the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B) of this section; (C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy [(e.g., Acts of God)]; (D) the permittee has received a permit modification under section 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1311(n), or 1326(a) of this title; or (E) the permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit, and has properly operated and maintained the facilities, but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

Even if a discharger can meet either the requirements of the antidegradation rule under §303(d)(4) or one of the statutory exceptions listed in §402(o)(2), there are still limitations as to how far a permit may be allowed to backslide. Section 402(o)(3) acts as a floor to restrict the extent to which BPJ and water quality-based permit limitations may be relaxed under the antibacksliding rule. Under this subsection, even if EPA allows a permit to backslide from its previous permit requirements, EPA may never allow the reissued permit to contain effluent limitations which are less stringent than the current effluent limitation guidelines for that pollutant, or which would cause the receiving waters to violate the applicable state water quality standard adopted under the authority of §303.49.

Federal regulations 40 CFR 122.44 (l)(1) have been adopted to implement the antibacksliding requirements of the CWA:

(l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the

previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under Sec. 122.62.)

(2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

(i) Exceptions--A permit with respect to which paragraph (1)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if:

(A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;

(B)(1) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (2) The Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b);

(C) A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;

(D) The permittee has received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); or

(E) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

(ii) Limitations. In no event may a permit with respect to which paragraph (1)(2) of this section applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, issued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 303 applicable to such waters.

5. Federal Regulations, 40 CFR Part 133 requires a minimum of secondary treatment be provided. During wet weather flows, the proposed Permit indicates that the

required minimum level of treatment may not be provided by the Placer County SMD-1 wastewater treatment plant.

The proposed Permit, pages F-4 and F-5 states that: “The Facility is designed to provide tertiary treatment for average dry weather flows of 2.18 MGD and peak wet weather flows of 3.5 MGD. However, the Discharger has historically had high levels of infiltration and inflow (I/I) during wet weather events that have resulted in flows exceeding 3.5 MGD. During severe wet weather events, a portion of the influent bypasses comminution and grit removal and is directed through a bar screen to the primary clarifiers. Typically, only two of the four primary clarifiers are utilized as clarifiers while the other two are utilized for equalization; however, during wet weather conditions, all four are used for clarification. The trickling filters do not have the capacity to treat all wastewater under wet weather conditions, and a portion of the wastewater bypasses the trickling filter and is directed from the RBCs to the secondary clarifier. Furthermore, flows exceeding 3.5 MGD are routed around the gravity filters and flow directly to the chlorine contact basins. Thus, the Facility discharges a combination of secondary and tertiary treated wastewater during severe wet weather events.” (Emphasis added)

The proposed Permit also states that:

- The maximum measured flow rate was 8.28 mgd. (Page F-7)
- The minimum percent removal of BOD and TSS was 82.8% and 82.3%, respectively. (page F-5) The minimum required percent removal for BOD and TSS are 85% as required by 40 CFR 133.
- The maximum turbidity level was 10.4 NTU. (page F-5)

During the maximum flow event of 8.28 mgd, 4.78 mgd would have been bypassed as described in the above paragraph. There is no indication that the flows bypassing the trickling filters would have received sufficient oxidation in the RBCs. It is doubtful that the wet weather design capacity of the RBCs would have a peaking factor sufficient to accommodate these excess flows. The relatively low recorded levels of BOD and TSS could be due to a dilute influent from I/I flows and do not reflect treatment. The technical information in the proposed Permit would appear to indicate that a secondary level of treatment is not provided during periods of peak flow as is required by 40 CFR 133.

6. The proposed Permit replaces Effluent Limitations for turbidity which were present in the existing permit; contrary to the Antidegradation requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (l)(1).

Under the Clean Water Act (CWA), point source dischargers are required to obtain federal discharge (NPDES) permits and to comply with water quality based effluent limits (WQBELs) in NPDES permits sufficient to make progress toward the achievement of water quality standards or goals. The antidegradation and antidegradation rules clearly spell out the interest of Congress in achieving the CWA’s goal of continued progress toward eliminating all pollutant discharges. Congress clearly chose an overriding environmental interest in clean water through discharge

reduction, imposition of technological controls, and adoption of a rule against relaxation of limitations once they are established.

Upon permit reissuance, modification, or renewal, a discharger may seek a relaxation of permit limitations. However, according to the CWA, relaxation of a WQBEL is permissible only if the requirements of the antibacksliding rule are met. The antibacksliding regulations prohibit EPA from reissuing NPDES permits containing interim effluent limitations, standards or conditions less stringent than the final limits contained in the previous permit, with limited exceptions. These regulations also prohibit, with some exceptions, the reissuance of permits originally based on best professional judgment (BPJ) to incorporate the effluent guidelines promulgated under CWA §304(b), which would result in limits less stringent than those in the previous BPJ-based permit. Congress statutorily ratified the general prohibition against backsliding by enacting §§402(o) and 303(d)(4) under the 1987 Amendments to the CWA. The amendments preserve present pollution control levels achieved by dischargers by prohibiting the adoption of less stringent effluent limitations than those already contained in their discharge permits, except in certain narrowly defined circumstances.

When attempting to backslide from WQBELs under either the antidegradation rule or an exception to the antibacksliding rule, relaxed permit limits must not result in a violation of applicable water quality standards. The general prohibition against backsliding found in §402(o)(1) of the Act contains several exceptions. Specifically, under §402(o)(2), a permit may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant *if*: (A) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation; (B)(i) information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (ii) the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B) of this section; (C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy [(e.g., Acts of God)]; (D) the permittee has received a permit modification under section 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1311(n), or 1326(a) of this title; or (E) the permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit, and has properly operated and maintained the facilities, but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

Even if a discharger can meet either the requirements of the antidegradation rule under §303(d)(4) or one of the statutory exceptions listed in §402(o)(2), there are still limitations as to how far a permit may be allowed to backslide. Section 402(o)(3) acts as a floor to restrict the extent to which BPJ and water quality-based permit limitations may be relaxed under the antibacksliding rule. Under this subsection, even if EPA allows a permit to backslide from its previous permit requirements, EPA may never allow the reissued permit to contain effluent limitations which are less stringent than the current effluent limitation guidelines for that

pollutant, or which would cause the receiving waters to violate the applicable state water quality standard adopted under the authority of §303.49.

Federal regulations 40 CFR 122.44 (l)(1) have been adopted to implement the antibacksliding requirements of the CWA:

(l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under Sec. 122.62.)

(2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

(i) Exceptions--A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if:

(A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;

(B)(1) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (2) The Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b);

(C) A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;

(D) The permittee has received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); or

(E) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but

shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

(ii) Limitations. In no event may a permit with respect to which paragraph (l)(2) of this section applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, issued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 303 applicable to such waters.

The proposed Permit Fact Sheet discusses Pathogens and states that the previous Order established Effluent Limitations for turbidity. Turbidity limitations are maintained in the proposed Permit but have been moved to “Special Provisions”, they are no longer Effluent Limitations. The Fact Sheet Pathogen discussion states that infectious agents in sewage are bacteria, parasites and viruses and that tertiary treatment is necessary to effectively remove these agents. This discussion also states that turbidity limitations were originally established: “...to ensure that the treatment system was functioning properly and could meet the limits for total coliform organisms. This discussion is incorrect. First; coliform organism limitations are also an indicator parameter of the effectiveness of tertiary treatment. The coliform limitations in the proposed and past Permit are significantly lower than the Basin Plan Water Quality Objective and are based on the level of treatment recommended by the California Department of Public Health (DPH). Second; both the coliform limitations and turbidity are recommended by DPH as necessary to protect recreational and irrigated agricultural beneficial uses of the receiving water. Turbidity has no lesser standing than coliform organisms in the DPH recommendation. Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. There are no limitations for viruses and parasites in the proposed Permit, which the Regional Board has indicated, are necessary to protect the contact recreation and irrigated agricultural uses of the receiving water. Both coliform and turbidity limitations are treatment effectiveness indicators that the levels of bacteria viruses and parasites are adequately removed to protect the beneficial uses. Special Provisions are not Effluent Limitations as required by the Federal Regulations. The turbidity Effluent Limitations must be restored in accordance with the Clean Water Act and Federal regulations 40 CFR 122.44 (l)(1).

In discussing and analyzing turbidity, the Regional Board has consistently ignored the secondary maximum contaminant level (MCL) for drinking water. The Basin Plan, at Water Quality Objectives for Inland Surface Waters, Chemical Constituents (p. III-3.00), requires that “[a]t a minimum, water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following Provisions of Title 22 of the California Code of Regulations, which are incorporated by reference into this plan: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels-Ranges) of Section 64449.” Municipal and

domestic supply is an existing beneficial use of the surface water, which carries a Secondary MCL for turbidity of 5 NTU. The proposed Permit states that the maximum turbidity level of the effluent was 10.4 NTU (page F-5). An Effluent Limitation for turbidity is required based on the drinking water quality standard.

The only rationale that can explain moving the turbidity from Effluent Limitations to Provisions is to protect Dischargers from mandatory minimum penalties as prescribed by the California Water Code, Section 13385. It is doubtful that it was intent of the legislature in adopting the mandatory penalty provisions to have the Regional Boards delete Effluent Limitations from permit to avoid penalties.

7. The proposed Permit fails to include an Effluent for Chloroform as required by Federal Regulations 40 CFR 122.44 and the permit should not be adopted in accordance with California Water Code Section 13377.

The proposed Permit states that the annual average concentration for chloroform was 41 ug/l, but Table F-2 shows the maximum effluent concentration was 99 ug/l. Order No. R5-2005-0074 established effluent limitations for chloroform based on the California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) cancer potency factor represented by the one-in-a-million cancer risk level in drinking water of 1.1 ug/L. Obviously, even the annual average exceeds the OEHHA cancer potency factor. The primary MCL for chloroform is 80 ug/l for total trihalomethanes of which chloroform is a part.

The Antibacksliding requirements have been addressed above.

The Regional Bases their conclusion to eliminate the Effluent Limitation on the following: “However, there are no immediate municipal uses downstream of the discharge and it is not appropriate to apply the OEHHA cancer potency factor to determine reasonable potential to exceed the Basin Plan’s narrative chemical constituent objective.” This statement and conclusion is contrary to all of the other Findings in the proposed Permit, such as the following from page F-20: The State Water Board has issued numerous water rights, for domestic and irrigation uses, on Main Canal and downstream waters, the Sacramento River, the Bear River, and the Feather River, downstream of the discharge. Many of the waterways downstream of the discharge are managed by irrigation districts and retain the domestic and irrigation beneficial uses. Nevada Irrigation District controls the flows in Dry Creek, Coon Creek, and Camp Far West Ditch. Nevada Irrigation District staff confirmed the existence of domestic uses of this water by reporting that water from Camp Far West Ditch is utilized for in-home use. The Nevada Irrigation District requires the homeowner to purchase 5 gallons of bottled drinking water per month. The Nevada Irrigation District sells water from Coon Creek and Camp Far West Ditch and has assessed the principal uses as family garden use and pasture irrigation. Over a distance of approximately 25 miles on Camp Far West Ditch, there are 37 irrigation customers, two of whom have irrigation water connected to their homes. Riparian rights, for landowners along streams and rivers, are not recorded with the State Water Board and have precedence over other water rights and may include domestic and municipal uses. The wastewater discharge occurs in a residential area and the effluent immediately flows through numerous yards bordering Dry Creek. Home garden irrigation has been identified as an existing beneficial use of the stream.”

The Regional Board can't have it both ways, there are identified drinking water uses site specifically identified immediately downstream of the discharge.

Federal Regulation, 40 CFR 122.45 (d)(2) requires that permit for POTWs establish Effluent Limitations as an average weekly and average monthly. Even if the Regional Board was correct that Effluent Limitations based on MCLs were to be established as an annual average, this would not carry over to conducting the reasonable potential to determine if an Effluent Limitation is necessary. The Regional Board cites the SIP as being the source of their rationale for conducting a reasonable potential analysis and state in Finding M that: "To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000." Section 1.3 of the SIP clearly requires comparison of the maximum effluent concentration (MEC) to the applicable water quality criterion to determine the need for an Effluent Limitation.

CSPA has long argued that the reasonable potential analysis must be done in accordance with Federal regulations, 40 CFR § 122.44(d)(1)(ii), which states "when determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, **the variability of the pollutant or pollutant parameter in the effluent**, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water." Emphasis added. The reasonable potential analysis fails to consider the statistical variability of data and laboratory analyses as explicitly required by the federal regulations.

The Regional Board has failed to follow their own standard of using SIP Section 1.3 to develop Effluent Limitations and the mandated method from 40 CFR 122.44, but instead now makes up a new method with no regulatory or technical justification whatever.

Federal Regulations, 40 CFR 122.44 (d)(i), requires that; "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. California Water Code, section 13377, requires that: "Notwithstanding any other provision of this division, the state board and the regional boards shall, as required or authorized by the Federal Water Pollution Control Act, as amended, issue waste discharge and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance."

8. The proposed Permit fails to include an Effluent for Manganese as required by Federal Regulations 40 CFR 122.44 and the permit should not be adopted in accordance with California Water Code Section 13377.

The proposed Permit states that the annual average concentration for manganese was 29 ug/l, but Table F-2 shows the maximum effluent concentration was 64.6 ug/l. Order No. R5-2005-0074 established effluent limitations for manganese based on the secondary MCL of 50 ug/l.

Federal Regulation, 40 CFR 122.45 (d)(2) requires that permit for POTWs establish Effluent Limitations as an average weekly and average monthly. Even if the Regional Board was correct that Effluent Limitations based on MCLs were to be established as an annual average, this would not carry over to conducting the reasonable potential to determine if an Effluent Limitation is necessary. The Regional Board cites the SIP as being the source of their rationale for conducting a reasonable potential analysis and state in Finding M that: "To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000." Section 1.3 of the SIP clearly requires comparison of the maximum effluent concentration (MEC) to the applicable water quality criterion to determine the need for an Effluent Limitation.

CSPA has long argued that the reasonable potential analysis must be done in accordance with Federal regulations, 40 CFR § 122.44(d)(1)(ii), which states "when determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, **the variability of the pollutant or pollutant parameter in the effluent**, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water." Emphasis added. The reasonable potential analysis fails to consider the statistical variability of data and laboratory analyses as explicitly required by the federal regulations.

The Regional Board has failed to follow their own standard of using SIP Section 1.3 to develop Effluent Limitations and the mandated method from 40 CFR 122.44, but instead now makes up a new method with no regulatory or technical justification whatever.

9. The proposed Permit does not contain an Effluent Limitation for oil and grease in violation of Federal Regulations 40 CFR 122.44 and California Water Code Section 13377.

Total oil and grease was detected in the effluent at 5.4 mg/l (table F-2). TPHG was detected above the taste and odor threshold in four of 11 effluent samples (three of the four were estimated values). TPHK was detected above the SNARL in one of 11 effluent samples, while TPHD was detected above the SNARL in all 11 effluent samples (page F-36).

Oil and grease is highly toxic to aquatic life: toxic at concentrations as low as 0.1 mg/L and sublethal toxicities are reported at 10-100 µg/L. In fact, it has been shown that petroleum products can harm aquatic life at concentrations as low as 1 µg/l. Oil and grease is also persistent, bioaccumulative and highly toxic in sediment. The US EPA's water quality standard for oil and grease is stated as: "a) 0.01 of the lowest continuous flow 96-hour LC50 to several important freshwater and marine species, each having a demonstrated high susceptibility to oils

and petrochemicals, b) Levels of oils or petrochemicals in the sediment which cause deleterious effects to the biota should not be allowed and c) surface waters shall be virtually free from floating nonpetroleum oils of vegetable or animal origin, as well as petroleum-derived oils” Goldbook, 1986, Quality Criteria for Water, EPA 440/5-86-001. A table summarizing lethal toxicities of various petroleum products to aquatic life can be found in EPA’s 1976 Quality Criteria for Water (Redbook, pp 210-215). The Basin Plan’s narrative limit for oil and grease is stated as “[w]aters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses” Basin Plan, III-5.00.

Proposed Permit, page F-34 states that: “Oil and grease used to be a problem at many POTWs and was a necessary effluent limit to protect the treatment plant and receiving waters. However, implementation of fats oils and grease (FOG) and pretreatment programs, in conjunction with improved levels of treatment, have resulted in an overall reduction of oil and grease in wastewater treatment plant effluent.” Obviously this is a “canned” statement that does not apply to this discharge. There were no “improved levels of treatment” at the SMD-1 wastewater treatment plant. There is also no “FOG” program documented in the proposed Permit.

With regard to total petroleum hydrocarbons, the proposed Permit states on page F-36 that: “However, there are no immediate municipal uses downstream of the discharge and it is not appropriate to apply the taste and odor thresholds or the SNARL to determine reasonable potential to exceed the Basin Plan’s narrative taste and odor objective.” This statement and conclusion is contrary to all of the other Findings in the proposed Permit, such as the following from page F-20: The State Water Board has issued numerous water rights, for domestic and irrigation uses, on Main Canal and downstream waters, the Sacramento River, the Bear River, and the Feather River, downstream of the discharge. Many of the waterways downstream of the discharge are managed by irrigation districts and retain the domestic and irrigation beneficial uses. Nevada Irrigation District controls the flows in Dry Creek, Coon Creek, and Camp Far West Ditch. Nevada Irrigation District staff confirmed the existence of domestic uses of this water by reporting that water from Camp Far West Ditch is utilized for in-home use. The Nevada Irrigation District requires the homeowner to purchase 5 gallons of bottled drinking water per month. The Nevada Irrigation District sells water from Coon Creek and Camp Far West Ditch and has assessed the principal uses as family garden use and pasture irrigation. Over a distance of approximately 25 miles on Camp Far West Ditch, there are 37 irrigation customers, two of whom have irrigation water connected to their homes. Riparian rights, for landowners along streams and rivers, are not recorded with the State Water Board and have precedence over other water rights and may include domestic and municipal uses. The wastewater discharge occurs in a residential area and the effluent immediately flows through numerous yards bordering Dry Creek. Home garden irrigation has been identified as an existing beneficial use of the stream.” The Regional Board can’t have it both ways, there are identified drinking water uses site specifically identified immediately downstream of the discharge.

The proposed Permit is for a domestic wastewater treatment plant. Domestic wastewater treatment plants, by their nature, receive oil and grease in concentrations from home cooking and restaurants that present a reasonable potential to exceed the Basin Plan water quality objective for oil and grease (Basin Plan III-5.00). Confirmation sampling is not necessary to establish that

domestic wastewater treatment systems contain oil and grease in concentrations that present a reasonable potential to exceed the water quality objective. It is not unusual for sewerage systems to allow groundwater cleanup systems, such as from leaking underground tanks, to discharge into the sanitary sewer. Groundwater polluted with petroleum hydrocarbons can also infiltrate into the collection system as easily as sewage exfiltrates. The Central Valley Regional Board has a long established history of including oil and grease limitations in NPDES permits at 15 mg/l as a daily maximum and 10 mg/l as a monthly average, which has established BPTC for POTWs.

The California Water Code (CWC), Section 13377 states in part that: "...the state board or the regional boards shall...issue waste discharge requirements...which apply and ensure compliance with ...water quality control plans, or for the protection of beneficial uses..." Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a), proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter. US EPA has interpreted 40 CFR 122.44(d) in *Central Tenets of the National Pollutant Discharge Elimination System (NPDES) Permitting Program* (Factsheets and Outreach Materials, 08/16/2002) that although States will likely have unique implementation policies there are certain tenets that may not be waived by State procedures. These tenets include that "where the preponderance of evidence clearly indicates the potential to cause or contribute to an exceedance of State water quality standards (even though the data may be sparse or absent) a limit MUST be included in the permit." Failure to include an effluent limitation for oil and grease in the proposed permit violates 40 CFR 122.44 and CWC 13377.

10. The Proposed Permit Fails to Include Limitations that are Protective of the Municipal and Domestic Beneficial Uses of the Receiving Stream Contrary to Federal Regulations 40 CFR 122.4, 122.44(d) and the California Water Code, Section 13377.

The proposed Permit, on pages F-47 and F-48 states that: "In site-specific situations where a discharge is occurring to a stream with a downstream water intake used as a domestic water supply without treatment, the DPH has recommended the same Title 22 tertiary treatment requirements for the protection of MUN, as well as protecting REC-1 and AGR. DPH has also recommended a 20:1 dilution ratio in addition to the Title 22 tertiary treatment requirement where there are existing domestic water users of raw water near the treatment plant outfall. In this case, there are no such known uses that could be affected by the discharge, so tertiary treatment plus 20:1 dilution is not necessary to protect the MUN, REC-1 or AGR uses." The statement that there are no known drinking water intakes where treatment is not provided is simply wrong. There are very well documented drinking and domestic water intakes immediately downstream that do not provide treatment. The proposed Permit, page F-20, states that : The State Water Board has issued numerous water rights, for domestic and irrigation uses, on Main Canal and downstream waters, the Sacramento River, the Bear River, and the Feather River, downstream of the discharge. Many of the waterways downstream of the discharge are managed by irrigation districts and retain the domestic and irrigation beneficial uses. Nevada

Irrigation District controls the flows in Dry Creek, Coon Creek, and Camp Far West Ditch. Nevada Irrigation District staff confirmed the existence of domestic uses of this water by reporting that water from Camp Far West Ditch is utilized for in-home use. The Nevada Irrigation District requires the homeowner to purchase 5 gallons of bottled drinking water per month. The Nevada Irrigation District sells water from Coon Creek and Camp Far West Ditch and has assessed the principal uses as family garden use and pasture irrigation. Over a distance of approximately 25 miles on Camp Far West Ditch, there are 37 irrigation customers, two of whom have irrigation water connected to their homes. Riparian rights, for landowners along streams and rivers, are not recorded with the State Water Board and have precedence over other water rights and may include domestic and municipal uses. The wastewater discharge occurs in a residential area and the effluent immediately flows through numerous yards bordering Dry Creek. Home garden irrigation has been identified as an existing beneficial use of the stream.”

In accordance with the proposed Permit Findings “DPH has also recommended a 20:1 dilution ratio in addition to the Title 22 tertiary treatment requirement where there are existing domestic water users of raw water near the treatment plant outfall” the municipal and domestic beneficial uses of the receiving stream are not protected. There are documented domestic and municipal uses downstream of the wastewater treatment plant. The receiving stream does not provide a minimum dilution ratio of twenty to one.

The proposed Permit contains very clear and explicit Findings that municipal and domestic supply (MUN) are beneficial uses of the receiving stream as designated in the Sacramento San Joaquin River Basins Water Quality Control Plan (Basin Plan). Federal Regulation, 40 CFR 122.4 (a), (d) and (g) require that no permit may be issued when the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or regulations promulgated under the CWA, when imposition of conditions cannot ensure compliance with applicable water quality requirements and for any discharge inconsistent with a plan or plan amendment approved under Section 208(b) of the CWA. Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. California Water Code, section 13377, requires that: “Notwithstanding any other provision of this division, the state board and the regional boards shall, as required or authorized by the Federal Water Pollution Control Act, as amended, issue waste discharge and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.”

Direct ingestion is a more sensitive use of water than contact recreation uses or eating food crops irrigated with treated sewage. In 1987 DPH issued the *Uniform Guidelines for the Disinfection of Wastewater* (Uniform Guidelines) as recommendations to the Regional Water Quality Control Boards regarding disinfection requirements for wastewater discharges to surface waters. The Uniform Guidelines recommend a “no discharge” of treated domestic wastewater to freshwater streams used for domestic water supply. Where is not possible to prevent a wastewater discharge: the Uniform Guidelines recommend that no discharge be allowed unless a minimum of a twenty-to-one in stream dilution is available. The DPH has reiterated the recommendations

of the Uniform Guidelines to the Central Valley Regional Board on numerous occasions: specifically a 1 July 2003 letter to the Executive Officer (Thomas Pinkos); a 28 September 2000 Memorandum to regional and district engineers from Jeff Stone; and cite specific recommendations for the City of Jackson's wastewater discharge. A discharge of tertiary treated domestic wastewater to an ephemeral stream is not protective of the domestic and municipal beneficial uses of the receiving stream. It must be noted that the 18 August 1992 transmittal letter of the Uniform Guidelines removed the tertiary plus twenty to one dilution recommendations based on adoption of the Surface Water Treatment Rule. In this case, however as was the case with the City of Jackson, the downstream users do not have drinking water treatment systems in place.

CCR Title 22 is cited in the proposed Permit as the source of information for requiring tertiary treatment to protect the contact recreation and food crop irrigation beneficial uses of the receiving stream. CCR Title 22 does not discuss or provide a level of treatment adequate to protect drinking water. To the contrary, Title 22 contains numerous requirements (60310) to prevent cross connections with potable water supplies, setback requirements from domestic supplies and wells, and warning signs not to drink the water: "RECLAIMED WATER DO NOT DRINK" verifying that tertiary treated domestic wastewater is not fit for human consumption. Tertiary treated wastewater discharged to ephemeral streams is not of adequate quality for municipal use and is therefore not protective of the DOM beneficial use.

The proposed Permit does not protect the drinking water beneficial use of the receiving stream as is required by Federal Regulations 40 CFR 122.4, 122.44(d) and the California Water Code, Section 13377 and in accordance with these requirements cannot be issued.

11. The proposed Permit does not contain an Effluent Limitation for electrical conductivity (EC) in violation of Federal Regulations 40 CFR 122.44 and California Water Code Section 13377.

Federal Regulations, 40 CFR 122.44 (d)(i), requires that; "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." The Water Quality Control Plan (Basin Plan) for the Central Valley Region, Water Quality Objectives, page III-3.00, contains a Chemical Constituents Objective that includes Title 22 Drinking Water Maximum Contaminant Levels (MCLs) by reference. The Title 22 MCLs for EC are 900 µmhos/cm (recommended level), 1,600 µmhos/cm (upper level) and 2,200 µmhos/cm (short term maximum).

The Basin Plan states, on Page III-3.00 Chemical Constituents, that "Waters shall not contain constituents in concentrations that adversely affect beneficial uses." The Basin Plan's "Policy for Application of Water Quality Objectives" provides that in implementing narrative water quality objectives, the Regional Board will consider numerical criteria and guidelines developed by other agencies and organizations. This application of the Basin Plan is consistent with Federal Regulations, 40CFR 122.44(d).

For EC, *Ayers R.S. and D.W. Westcott, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985)*, levels above 700 µmhos/cm will reduce crop yield for sensitive plants. The University of California, Davis Campus, Agricultural Extension Service, published a paper, dated 7 January 1974, stating that there will not be problems to crops associated with salt if the EC remains below 750 µmhos/cm.

The discharge of EC or TDS may exceed water quality objectives for each designated beneficial use:

- MUN: The Drinking Water maximum contaminant levels (MCLs) are water quality objectives incorporated into the Basin Plan Chemical Constituents by reference. The MCL for TDS is 500 mg/l as the recommended level, 1,000 mg/l as an upper level and 1,500 mg/l as a short term maximum. *McKee and Wolf* (1971 Water Quality Criteria) cite that waters above 4,000 mg/l TDS are generally unfit for human use.
- AGR: The Basin Plan states, on Page III-3.00 Chemical Constituents, that “Waters shall not contain constituents in concentrations that adversely affect beneficial uses.” The Basin Plan’s “Policy for Application of Water Quality Objectives” provides that in implementing narrative water quality objectives, the Regional Board will consider numerical criteria and guidelines developed by other agencies and organizations. This application of the Basin Plan is consistent with Federal Regulations, 40CFR 122.44(d). For EC, *Ayers R.S. and D.W. Westcott, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985)*, levels above 700 µmhos/cm will reduce crop yield for sensitive plants. The State Water Resources Control Board’s *Irrigation with Reclaimed Municipal Waste (July 1984)* and *McKee and Wolf* (1971 Water Quality Criteria), state that waters with TDS above 2,100 mg/l are unsuitable for any irrigation under most conditions.
- IND: *McKee and Wolf* (1971 Water Quality Criteria) lists the limiting TDS concentrations for numerous industrial uses in mg/l; boiler feed water 50-3000, brewing 500-1000, canning 850, general food processing 850 and paper manufacturing 80-500.
- COLD/MIGR/SPWN: In a *Biological Significance* document sent to the Regional Board regarding the Musco Olive facility, dated November 1st 2006, James M. Harrington, Staff Water Quality Biologist with the California Department of Fish and Game, citing *McKee and Wolf* (1971 Water Quality Criteria) wrote that: “Surveys of inland fresh waters indicates that good mixes of fish fauna are found where conductivity values range between 150 and 500 umhos/cm. Even in the most alkaline

waters, the upper tolerance limit for aquatic life is approximately 2000 umhos/cm.”

The beneficial uses of receiving streams may be degraded by salt concentrations in wastewater discharges and Federal Regulation, 40 CFR 122.4 (a), (d) and (g) require that no permit may be issued when the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or regulations promulgated under the CWA, when imposition of conditions cannot ensure compliance with applicable water quality requirements and for any discharge inconsistent with a plan or plan amendment approved under Section 208(b) of the CWA. California Water Code, section 13377, requires that: “Notwithstanding any other provision of this division, the state board and the regional boards shall, as required or authorized by the Federal Water Pollution Control Act, as amended, issue waste discharge and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.” The Region 5 Permits does not protect the beneficial uses of the receiving stream, the Sacramento River, and therefore does not comply with the requirements of Federal Regulations and the California Water Code.

The Central Valley Basin Plan, page IV-15.00, contains a *Controllable Factors Policy* which states that: “Controllable water quality factors are not allowed to cause further degradation of water quality in instances where other factors have already resulted in water quality objectives being exceeded. Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the State, that are subject to the authority of the State Water or Regional Water Board, and that may be reasonably controlled.”

The discharge of salt (EC or TDS) may be a designated waste as defined by the CWC, Section 13173(b) as nonhazardous waste that contains pollutants that could be released in concentrations exceeding applicable water quality objectives; which must be regulated in accordance with Title CCR 27. The discharge of salt may exceed the Toxicity and Chemical Constituents (drinking water MCL and at concentrations that adversely affect the industrial and agricultural beneficial uses) water quality objectives. CCR, Title 27, Section 20210, requires that designated wastes shall only be discharged at Class I or Class II waste management units. Designated waste must be kept out of the receiving stream. The Region 5 Permits consistently allow the discharge of a designated waste to surface water in violation of CCR Title 27.

The wastewater discharge maximum observed EC was 1090 μ mhos/cm. Clearly the discharge exceeds the MCLs and agricultural water quality goal for EC presenting a reasonable potential to exceed the water quality objective. The proposed Order fails to establish an effluent limitation for EC that are protective of the Chemical Constituents water quality objective. The SMD-1 wastewater discharge increases concentrations of EC to unacceptable concentrations adversely affecting the agricultural beneficial use. The available literature regarding safe levels of EC for irrigated agriculture mandate that an Effluent Limitation for EC is necessary to protect the beneficial use of the receiving stream in accordance with the Basin Plan and Federal

Regulations. Failure to establish effluent limitations for EC that are protective of the Chemical Constituents water quality objective blatantly violates the law.

12. The proposed Permit fails to contain mass-based effluent limits as required by Federal Regulations 40 CFR 122.45(b).

Mass based Effluent Limitations are critically important for the discharge from the SMD-1 wastewater treatment plant since the facility has a history of bypassing inadequately treated wastewater during periods of high flow. The permit does not limit peak flows and the wet weather peak flows have routinely exceeded the capacity of the treatment system. The facility is plagued with infiltration and inflow (I/I) problems. The I/I flows should not contain large loads of pollutants, but the dilute influent can interfere with the system's ability to adequately treat waste. The facility is also subject to industrial flows, as evidenced by US EPA inspections and the requirements for an industrial pretreatment program. The industrial facilities may have similar issues during periods of high flow, yet could discharge excess pollutants if the facility is not regulated by mass.

Federal Regulation, 40 CFR 122.45 (b) requires that in the case of POTWs, permit Effluent Limitations, standards, or prohibitions shall be based on design flow. Concentration is not a basis for design flow. Mass limitations are concentration multiplied by the design flow and therefore meet the regulatory requirement.

Section 5.7.1 of U.S. EPA's *Technical Support Document for Water Quality Based Toxics Control* (TSD, EPA/505/2-90-001) states with regard to mass-based Effluent Limits:

“Mass-based effluent limits are required by NPDES regulations at 40 CFR 122.45(f). The regulation requires that all pollutants limited in NPDES permits have limits, standards, or prohibitions expressed in terms of mass with three exceptions, including one for pollutants that cannot be expressed appropriately by mass. Examples of such pollutants are pH, temperature, radiation, and whole effluent toxicity. Mass limitations in terms of pounds per day or kilograms per day can be calculated for all chemical-specific toxics such as chlorine or chromium. Mass-based limits should be calculated using concentration limits at critical flows. For example, a permit limit of 10 mg/l of cadmium discharged at an average rate of 1 million gallons per day also would contain a limit of 38 kilograms/day of cadmium.

Mass based limits are particularly important for control of bioconcentratable pollutants. Concentration based limits will not adequately control discharges of these pollutants if the effluent concentrations are below detection levels. For these pollutants, controlling mass loadings to the receiving water is critical for preventing adverse environmental impacts.

However, mass-based effluent limits alone may not assure attainment of water quality standards in waters with low dilution. In these waters, the quantity of effluent discharged has a strong effect on the instream dilution and therefore upon the RWC. At the extreme case of a stream that is 100 percent effluent, it is the effluent concentration rather than the

mass discharge that dictates the instream concentration. Therefore, EPA recommends that permit limits on both mass and concentration be specified for effluents discharging into waters with less than 100 fold dilution to ensure attainment of water quality standards.”

Federal Regulations, 40 CFR 122.45 (f), states the following with regard to 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 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.”

Federal Regulations, 40 CFR 122.45 (B)(1), states the following: “In the case of POTWs, permit effluent limitations, standards, or prohibitions shall be calculated based on design flow.”

Traditional wastewater treatment plant design utilizes average dry weather flow rates for organic, individual constituent, loading rates and peak wet weather flow rates for hydraulic design of pipes, weir overflow rates, and pumps.

Increased wet weather flow rates are typically caused by inflow and infiltration (I/I) into the sewer collection system that dilutes constituent loading rates and does not add to the mass of wastewater constituents.

For POTWs priority pollutants, such as metals, have traditionally been reduced by the reduction of solids from the wastestream, incidental to treatment for organic material. Following adoption of the CTR, compliance with priority pollutants is of critical importance and systems will need to begin utilizing loading rates of individual constituents in the WWTP design process. It is highly likely that the principal design parameters for individual priority pollutant removal will be based on mass, making mass based Effluent Limitations critically important to compliance. The inclusion of mass limitations will be of increasing importance to achieving compliance with requirements for individual pollutants.

As systems begin to design to comply with priority pollutants, the design systems for POTWs will be more sensitive to similar restrictions as industrial dischargers currently face where production rates (mass loadings) are critical components of treatment system design and compliance. Currently, Industrial Pretreatment Program local limits are frequently based on mass. Failure to include mass limitations would allow industries to discharge mass loads of individual pollutants during periods of wet weather when a dilute concentration was otherwise observed, upsetting treatment processes, causing effluent limitation processes, sludge disposal issues, or problems in the collection system.

In addition to the above citations, on June 26th 2006 U.S. EPA, Mr. Douglas Eberhardt, Chief of the CWA Standards and Permits Office, sent a letter to Dave Carlson at the Central Valley Regional Water Quality Control Board strongly recommending that NPDES permit effluent limitations be expressed in terms of mass as well as concentration.

The proposed Permit contains an inadequate antidegradation analysis that does not comply with the requirements of Section 101(a) of the Clean Water Act, Federal Regulations 40 CFR § 131.12, the State Board's Antidegradation Policy (Resolution 68-16) and California Water Code (CWC) Sections 13146 and 13247.

CWC Sections 13146 and 13247 require that the Board in carrying out activities which affect water quality shall comply with state policy for water quality control unless otherwise directed by statute, in which case they shall indicate to the State Board in writing their authority for not complying with such policy. The State Board has adopted the Antidegradation Policy (Resolution 68-16), which the Regional Board has incorporated into its Basin Plan. The Regional Board is required by the CWC to comply with the Antidegradation Policy.

Section 101(a) of the Clean Water Act (CWA), the basis for the antidegradation policy, states that the objective of the Act is to "restore and maintain the chemical, biological and physical integrity of the nation's waters." Section 303(d)(4) of the CWA carries this further, referring explicitly to the need for states to satisfy the antidegradation regulations at 40 CFR § 131.12 before taking action to lower water quality. These regulations (40 CFR § 131.12(a)) describe the federal antidegradation policy and dictate that states must adopt both a policy at least as stringent as the federal policy as well as implementing procedures.

California's antidegradation policy is composed of both the federal antidegradation policy and the State Board's Resolution 68-16 (State Water Resources Control Board, Water Quality Order 86-17, p. 20 (1986) ("Order 86-17"); Memorandum from Chief Counsel William Attwater, SWRCB to Regional Board Executive Officers, "federal Antidegradation Policy," pp. 2, 18 (Oct. 7, 1987) ("State Antidegradation Guidance")). As a state policy, with inclusion in the Water Quality Control Plan (Basin Plan), the antidegradation policy is binding on all of the Regional Boards (Water Quality Order 86-17, pp. 17-18).

Implementation of the state's antidegradation policy is guided by the State Antidegradation Guidance, SWRCB Administrative Procedures Update 90-004, 2 July 1990 ("APU 90-004") and USEPA Region IX, "Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12" (3 June 1987) ("Region IX Guidance"), as well as Water Quality Order 86-17.

The Regional Board must apply the antidegradation policy whenever it takes an action that will lower water quality (State Antidegradation Guidance, pp. 3, 5, 18, and Region IX Guidance, p. 1). Application of the policy does not depend on whether the action will actually impair beneficial uses (State Antidegradation Guidance, p. 6). Actions that trigger use of the antidegradation policy include issuance, re-issuance, and modification of NPDES and Section 404 permits and waste discharge requirements, waiver of waste discharge requirements, issuance of variances, relocation of discharges, issuance of cleanup and abatement orders, increases in discharges due to industrial production and/or municipal growth and/or other sources, exceptions from otherwise applicable water quality objectives, etc. (State Antidegradation Guidance, pp. 7-10, Region IX Guidance, pp. 2-3). Both the state and federal policies apply to point and nonpoint source pollution (State Antidegradation Guidance p. 6, Region IX Guidance, p. 4).

The federal antidegradation regulations delineate three tiers of protection for waterbodies. Tier 1, described in 40 CFR § 131.12(a)(1), is the floor for protection of all waters of the United States (48 Fed. Reg. 51400, 51403 (8 Nov. 1983); Region IX Guidance, pp. 1-2; APU 90-004, pp. 11-12). It states that “[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.” Uses are “existing” if they were actually attained in the water body on or after November 28, 1975, or if the water quality is suitable to allow the use to occur, regardless of whether the use was actually designated (40 CFR § 131.3(e)). Tier 1 protections apply even to those waters already impacted by pollution and identified as impaired. In other words, already impaired waters cannot be further impaired.

Tier 2 waters are provided additional protections against unnecessary degradation in places where the levels of water quality are better than necessary to support existing uses. Tier 2 protections strictly prohibit degradation unless the state finds that a degrading activity is: 1) necessary to accommodate important economic or social development in the area, 2) water quality is adequate to protect and maintain existing beneficial uses and 3) the highest statutory and regulatory requirements and best management practices for pollution control are achieved (40 CFR § 131.12(a)(2)). Cost savings to a discharger alone, absent a demonstration by the project proponent as to how these savings are “necessary to accommodate important economic or social development in the area,” are not adequate justification for allowing reductions in water quality (Water Quality Order 86-17, p. 22; State Antidegradation Guidance, p. 13). If the waterbody passes this test and the degradation is allowed, degradation must not impair existing uses of the waterbody (48 Fed. Reg. 51403). Virtually all waterbodies in California may be Tier 2 waters since the state, like most states, applies the antidegradation policy on a parameter-by-parameter basis, rather than on a waterbody basis (APU 90-004, p. 4). Consequently, a request to discharge a particular chemical to a river, whose level of that chemical was better than the state standards, would trigger a Tier 2 antidegradation review even if the river was already impaired by other chemicals.

Tier 3 of the federal antidegradation policy states “[w]here high quality waters constitute an outstanding national resource, such as waters of national and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water shall be maintained and protected (40 CFR § 131.12(a)(3)). These Outstanding National Resource Waters (ONRW) are designated either because of their high quality or because they are important for another reason

(48 Fed. Reg. 51403; State Antidegradation Guidance, p. 15). No degradation of water quality is allowed in these waters other than short-term, temporary changes (Id.). Accordingly, no new or increased discharges are allowed in either ONRW or tributaries to ONRW that would result in lower water quality in the ONRW (EPA Handbook, p. 4-10; State Antidegradation Guidance, p. 15). Existing antidegradation policy already dictates that if a waterbody “should be” an ONRW, or “if it can be argued that the waterbody in question deserves the same treatment [as a formally designated ONRW],” then it must be treated as such, regardless of formal designation (State Antidegradation Guidance, pp. 15-16; APU 90-004, p. 4). Thus the Regional Board is required in each antidegradation analysis to consider whether the waterbody at issue should be treated as an ONRW. It should be reiterated that waters cannot be excluded from consideration as an ONRW simply because they are already “impaired” by some constituents. By definition, waters may be “outstanding” not only because of pristine quality, but also because of recreational significance, ecological significance or other reasons (40 CFR §131.12(a)(3)). Waters need not be “high quality” for every parameter to be an ONRW (APU 90-004, p. 4). For example, Lake Tahoe is on the 303(d) list due to sediments/siltation and nutrients, and Mono Lake is listed for salinity/TDC/chlorides but both are listed as ONRW.

The State Board’s APU 90-004 specifies guidance to the Regional Boards for implementing the state and federal antidegradation policies and guidance. The guidance establishes a two-tiered process for addressing these policies and sets forth two levels of analysis: a simple analysis and a complete analysis. A simple analysis may be employed where a Regional Board determines that: 1) a reduction in water quality will be spatially localized or limited with respect to the waterbody, e.g. confined to the mixing zone; 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 adequately subjected to the environmental and economic analysis required in an EIR. A complete antidegradation analysis is required if discharges would result in: 1) a substantial increase in mass emissions of a constituent; or 2) significant mortality, growth impairment, or reproductive impairment of resident species. Regional Boards are advised to apply stricter scrutiny to non-threshold constituents, i.e., carcinogens and other constituents that are deemed to present a risk of source magnitude at all non-zero concentrations. If a Regional Board cannot find that the above determinations can be reached, a complete analysis is required.

Even a minimal antidegradation analysis would require an examination of: 1) existing applicable water quality standards; 2) ambient conditions in receiving waters compared to standards; 3) incremental changes in constituent loading, both concentration and mass; 4) treatability; 5) best practicable treatment and control (BPTC); 6) comparison of the proposed increased loadings relative to other sources; 7) an assessment of the significance of changes in ambient water quality and 8) whether the waterbody was a ONRW. A minimal antidegradation analysis must also analyze whether: 1) such degradation is consistent with the maximum benefit to the people of the state; 2) the activity is necessary to accommodate important economic or social development in the area; 3) the highest statutory and regulatory requirements and best management practices for pollution control are achieved; and 4) resulting water quality is adequate to protect and maintain existing beneficial uses. A BPTC technology analysis must be done on an individual constituent basis; while tertiary treatment may provide BPTC for pathogens, dissolved metals may simply pass through.

The Antidegradation Analysis discussion in the proposed Permit discusses compared alternatives but fails to discuss the current sewer use fees and the costs to downstream water uses absent plant upgrades. Most importantly, the analysis fails to discuss any aspect of water quality. Numerous Effluent Limitations were removed from the permit, which is not discussed. The permit fails to regulate most constituents for mass, which is also not discussed which is critically important since high flows during wet weather are routinely bypassed with inadequate treatment. BPTC is not discussed. The plant bypasses of tertiary, and possibly secondary treatment is not discussed. Receiving water beneficial uses are not discussed. CTR compliance and the CTR compliance date of May 2010 are not discussed.

Thank you for considering these comments. If you have questions or require clarification, please don't hesitate to contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Jennings". The signature is written in a cursive, flowing style.

Bill Jennings, Executive Director
California Sportfishing Protection Alliance